



# Welcome to the 40mm Industry Day

5 August 2014



# 40MM GRENADE FAMILY INDUSTRY DAY

U.S. ARMY CONTRACTING COMMAND -  
ROCK ISLAND (ACC-RI)

Julie Seaba  
Procuring Contracting Officer  
CCRC-AL  
julie.a.seaba.civ@mail.mil  
309-782-3317



# Agenda



- 8:00 Opening Remarks
- 8:10 General Session
  - Acquisition Strategy & Milestones
  - Anticipated Request for Proposal (RFP) Requirements
    - Evaluation Criteria
    - Option
    - Financing Provisions
    - Economic Price Adjustment (EPA)
    - Restriction of Critical Items & Components
- 9:20 BREAK
- 9:30 Anticipated RFP Requirements (cont'd.)
  - Safeguarding Sensitive Conventional Arms, Ammo & Explosives (AA&E)
  - Government Furnished Property (GFP)
  - Test Weapons
  - First Article Acceptance Test (FAAT)
  - Statistical Process Control (SPC)
  - Critical Characteristics Clause (CCC)
  - Acceptance Inspection Equipment (AIE)
  - Technical Data Package (TDP) Updates
  - Small Business Size Requirements Overview
- 10:50 BREAK
- 11:00 General Session - Respond to Questions (as time permits)
- 12:00 - 1:00 LUNCH (lunch buffet or on own)
- 1:00 - 5:00 One-on-one Sessions

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# Purpose



The purpose of today's industry day is to provide potential Offerors with the current acquisition strategy, related information and anticipated requirements within the solicitation.

The Government is seeking feedback, particularly with regards to:

- Information required by the solicitation;
- Types of terms and conditions needed;
- Existing capabilities in the commercial marketplace;
- Industry and business practices to consider;
- Potential cost drivers;
- Quantity/Price breaks which may be more economical;
- Solutions to problems;
- Production issues and transitioning from one contract to the next; and
- Potential risks foreseen with this effort and recommendations on how to mitigate/avoid them.

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# TEAM



PM-MAS, Picatinny Arsenal, NJ:

Chris Seacord, Product Manager  
Ken Insco, Deputy Product Manager  
Kim McCleerey, Acquisition Manager  
Jim Terhune, 40mm Team Lead

Joint Munitions Command (JMC), Rock Island, IL:

Steve Hayes, 40mm Division Chief  
Mark Resetich, HV Team Lead  
Steve Slininger, LV Team Lead  
Stuart Handley, PQM Lead

Armament Research, Development and Engineering Center (ARDEC), Picatinny Arsenal, NJ:

Joe Hamill, ARDEC HV/LV APO  
Dan Schimpf, HV ARDEC Quality Engineering  
Dennis Sheehan, LV ARDEC Quality Engineering

Army Contracting Command-Rock Island (ACC-RI) :

Julie Seaba, PCO  
Traci Gerth, Contract Specialist  
Susan Allison-Hiebert, Attorney

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# Disclaimer



- All items in planning stages
- Numbers are notional:
  - Quantities
  - Option Ranges
- Milestones and other timeframes are estimates:
- Do NOT rely on information presented today in proposal formulation.

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# General Information



- Questions should be submitted on the Q&A sheets provided. In the general session proceeding lunch, the Government will answer as many questions as time permits.
- All information regarding the 40mm Grenade Family System solicitation, including questions and answers, will be posted under the 40mm Grenade Family System heading at:  
[https://www.acc.army.mil/contractingcenters/acc\\_ri/business\\_opportunities/draft\\_solicitations\\_scope/index.html](https://www.acc.army.mil/contractingcenters/acc_ri/business_opportunities/draft_solicitations_scope/index.html)
- The final solicitation will be issued under the same RFP number (W52P1J-13-R-0078) to the Army Single Face to Industry (ASFI) website:  
<https://acquisition.army.mil/asfi/default.cfm>
- **It will be the responsibility of the contractors to check these websites for the latest information regarding this acquisition.**

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# General Information



- All contractors who provide goods/services to the Department of Defense (DoD) must be registered in the Systems for Award Management (SAM). If you are not registered in SAM, you cannot be awarded a DoD Contract. The website for registering in the SAM is: <http://www.sam.gov/>

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# General Information



- Technical Data Packages (TDPs) are no longer available for order via CD-ROMs.
- TDPs for this solicitation will be accessible via the Federal Business Opportunities (FBO) website. You must have an FBO account prior to accessing any TDPs. For information on registering, see <http://www.fbo.gov/index>.
- TDPs and any other related documents, if applicable, for this solicitation **are restricted and export controlled**, and can only be accessed electronically via the FBO website, with valid contractor login credentials.
- Contractors **must** have a current approved DD Form 2345 on file Defense Logistics Information Service (DLIS) to access the TDPs. To obtain certification, go only those firms registered with the US/Canada Joint Certification Program (JCP). For information on becoming certified, see [www.logisticsinformationservice.dla.mil/jcp/](http://www.logisticsinformationservice.dla.mil/jcp/)
- See Clause 52.211,4502 (ACC-RI) for Technical Data Package Information, and Distribution and Destruction of Restricted Technical Data.

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# Acquisition Strategy



- 40mm Grenade Ammunition Family for FY15-19
- NAICS: 332993
- 100% Small Business Set-Aside (size standard is 1,500 employees)
- Anticipate up to two (2) Firm-Fixed-Price (FFP) systems contracts with Economic Price Adjustment (EPA)
- Base award , plus five (5) evaluated options
- Prices submitted on pricing matrix for all quantity ranges and for all option periods
- Best value, trade-off analysis
- Award may be made without discussions, therefore proposals should contain the offeror's best offer

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# Acquisition Strategy



This acquisition is to compete the following items:

- M385A1
- M430A1
- M433
- M585
- M583A1
- M781
- M661
- M662
- M781
- M918
- M992
- Mixed Belt

The Government anticipates making up to two (2) awards as a result of the solicitation.

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# Acquisition Strategy Milestones



- Government anticipates the release of Request for Proposal (RFP) within the first Quarter of FY 15

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# Anticipated RFP Requirements Evaluation Criteria



1. Technical Factor
  - Program Management sub-factor
  - Manufacturing/Quality sub-factor
2. Price/Cost Factor
3. Past Performance Factor

\* Note: Weights will be provided in the final RFP.

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# Anticipated RFP Requirements

(Reflects Most Likely Quantities Subject to Requirements & Funding)



CTG:	FY15:	FY16:	FY17:	FY18;	FY19:
M430A1	0	0	0	0	0
M433	0	0	50,000	0	0
M583A1	0	0	0	0	0
M781	351,279	429,874	420,450	416,310	345,517
M918	92,992	70,208	49,824	50,080	27,200
MIXED BELT	1,500,000	1,500,000	5,000,000*	5,000,000*	5,000,000*
M385A1	427,298	325,716	396,064	318,257	82,350
M992	0	0	0	0	0
M585	10,032	0	0	0	0
M661	0	0	0	0	0
M662	0	0	0	0	0

\* Reflects quantities for any potential delay with the 40mm Day Night Trainer Procurement

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# Anticipated RFP Requirements



- It is anticipated that the Mixed Belt cartridge may be split for the **base** quantity of 1,500,000.
  - \* Feedback is requested as to what split is the most advantageous, i.e. represents economical quantity break.
- In addition to the above stated cartridge, the following cartridges will also be available for award of option quantities to either, or both, awardees:
  - M385A1                      - M781
  - M430A1                      - M918
  - M433                              - M992
  - M585
  - M583A1
  - M661
  - M662

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# Anticipated RFP Requirements

## Evaluated Options



- It is emphasized that if split awards are made, the split is applicable to the **base** quantity only.
- Exercising option is ***always*** at the Government's discretion. No guarantee with option is explicitly, or implicitly, implied. **Accordingly, no one should assume that option quantity is guaranteed, or that if a base award is received, that the same % of any option quantity will be received.**
- At the time of option award, the Government will do an analysis and exercise option quantity IAW FAR 17.207.

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# Anticipated RFP Requirements

## Evaluated Options



- Base award + five (5) evaluated options:
  - Option Period One\*: FY15 (date of award – 30 Sep 15)
  - Option Period Two: FY16 (1 Oct 15 – 30 Sep 16)
  - Option Period Three: FY17 (1 Oct 16 – 30 Sep 17)
  - Option Period Four: FY18 (1 Oct 17 – 30 Sep 18)
  - Option Period Five: FY19 (1 Oct 18 – 30 Sep 19)

(\*Option Period 1 will immediately commence subsequent to award of the base quantity.)

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# Anticipated RFP Requirements

## Evaluated Options



- The Government foresees exercising the five (5) options in the identified option periods.
- HOWEVER, if the Government has exercised all available option quantities in a given option period, the Government reserves the right to exercise unused option quantities from previous option periods or to exercise options in succeeding option periods.
- After initial option award, the option will be awarded at the price range that includes both the previously awarded option plus the new requirement (aggregate). The previously awarded option will NOT be adjusted retrospectively.
- The Offeror must propose a First Article Acceptance Test (FAAT) cost for each item for each option period.
- Failure to provide firm-fixed-prices for all CLINs is unacceptable and may render the Offeror's proposal unacceptable and ineligible for award.

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# Anticipated RFP Requirements

## Options Ranges

**M430A1:**

30,000 - 99,999  
 100,000 - 249,999  
 250,000 - 499,999

**M433:**

25,000 - 99,999  
 100,000 - 249,999

**M583A1:**

10,000 - 24,999  
 25,000 - 99,999

**M781:**

200,000 - 499,999  
 500,000 - 1,000,000  
 1,000,001 - 2,000,000

**M918:**

10,000 - 24,999  
 25,000 - 99,999  
 100,000 - 249,999

**Mixed Belt:**

500,000 - 1,499,999  
 1,500,000 - 3,000,000  
 3,000,001 - 5,500,000

**M385A1:**

90,000 - 250,000  
 250,001 - 400,000  
 400,001 - 600,000

**M992:**

10,000 - 29,999  
 30,000 - 60,000

**M585:**

10,000 - 29,999  
 30,000 - 60,000

**M661:**

10,000 - 29,999  
 30,000 - 60,000

**M662:**

10,000 - 29,999  
 30,000 - 60,000

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# Anticipated RFP Requirements

## Financing Provisions



- Progress Payments, FAR 52.232-16
- Contractor Financing

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# Anticipated RFP Requirements

## Economic Price Adjustment (EPA)



- EPA is anticipated to include **STEEL, ALUMINUM** and **ZINC** only and will only apply to the amount of any increase or decrease in line item prices will be limited to the price of the actual fluctuation in material (**STEEL, ALUMINUM** and **ZINC**) only and shall not include such costs as labor, overhead, G&A and profit.
- The PCO will notify the Contractor approximately 30 days prior to exercising any options. Within 20 days of the notice, the Contractor shall provide any increases or decreases of at least 1% related to **STEEL, ALUMINUM**, or **ZINC** prices, including related documentation to support proposed changes.
- The option quantity exercised will be awarded at the originally proposed CLIN unit price plus or minus the Contractor substantiated adjustment, based on the price fluctuation (increases or decreases) for **STEEL, ALUMINUM**, and **ZINC**.

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# Anticipated RFP Requirements

## Economic Price Adjustment (EPA)



- No contract adjustment for any change in CLIN unit price which would not result in a net change of at least ONE PERCENT (1%) of the then-current unit price of the actual material.
- The total increase for any option unit price made under this clause shall not exceed TEN PERCENT (10%) of the fixed-price CLIN unit price.
- There is NO percentage limitation on the amount of **decreases** that may be made under this clause.
- Any adjustments to the CLIN unit price for option quantities will **ONLY** be made at the time of exercising an option. The unit price for any option quantities remaining available for exercising will remain at the originally proposed firm-fixed CLIN unit price.

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# Anticipated RFP Requirements

## Economic Price Adjustment (EPA)



- Offerors shall provide the detailed data required by the EPA clause with their original proposal submission by completing the EPA worksheet & IAW Section L requirements.
- Supporting documentation is required in the form of a vendor quote, purchase order, invoices, etc. (including any escalation applied by the contractor) to substantiate the prices for steel and aluminum submitted.
- The EPA worksheet will have the metal content per round already provided on the following slides.

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# Anticipated RFP Requirements

## EPA – Steel Content



Steel lbs per M430A1:	0.91545
Steel lbs per M433:	0.14150
Steel lbs per M918:	0.55545
Steel lbs per Mixed Belt:	0.55545
Steel lbs per M385A1:	0.55545
Steel lbs per M583A1:	0.26136
Steel lbs per M585:	0.26136
Steel lbs per M661:	0.26136
Steel lbs per M662:	0.26136
Steel lbs per M992:	0.26136
Steel lbs per M781:	-0-

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# Anticipated RFP Requirements



## EPA – Aluminum Content

- Aluminum lbs per M430A1: 0.78190
- Aluminum lbs per M433: 0.52540
- Aluminum lbs per M918: 0.20793
- Aluminum lbs per Mixed Belt: 0.20793
- Aluminum lbs per M385A1: 0.20793
- Aluminum lbs per M583A1: 0.41800
- Aluminum lbs per M585: 0.41800
- Aluminum lbs per M661: 0.41800
- Aluminum lbs per M662: 0.41800
- Aluminum lbs per M992: 0.41800
- Aluminum lbs per M781: -0-

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# Anticipated RFP Requirements



## EPA – Zinc Content

- Zinc lbs per M430A1: -0-
- Zinc lbs per M433: -0-
- Zinc lbs per M918: -0-
- Zinc lbs per Mixed Belt: -0-
- Zinc lbs per M385A1: -0-
- Zinc lbs per M583A1: -0-
- Zinc lbs per M585: -0-
- Zinc lbs per M661: -0-
- Zinc lbs per M662: -0-
- Zinc lbs per M992: -0-
- Zinc lbs per M781: 0.38220

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# Anticipated RFP Requirements

## Restriction of Critical Items & Components



These items/components shall be procured, manufactured, assembled, and tested within the NTIB (United States or Canada):

- Explosives: Comp A4, and CH-5
- Load, Assembly and Pack (LAP): Requirements are under review at this time, and will be specified in the formal solicitation.

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# Anticipated RFP Requirements

## Safeguarding Sensitive Conventional Arms, Ammo & Explosives (AA&E)



- The requirements of DoD 5100.76-M, apply to the following items of AA&E being developed, produced, manufactured, or purchased for, or provided by, the Government:

Item:	NSN:	Sensitivity/Category
M430A1 Cartridge, 40MM	1310-01-567-5540	III
M430A1 Cartridge, 40MM	1310-01-564-2160	III
High Explosive Material	1376-00-764-8065	III
High Explosive Material	1376-00-787-7614	III
Fuze, Point Initiating, Base Detonating	1390-01-419-5950	III
M433 Cartridge, 40MM	1310-00-992-0451	III
High Explosive Material	1376-00-764-8065	III
High Explosive Material	1376-00-787-7614	III
Fuze, Point Initiating, Base Detonating	1390-01-052-2124	IV
M583A1 Cartridge, 40MM	1310-00-159-3198	IV
M781 Cartridge, 40MM	1310-01-589-4275	IV
M918 Cartridge, 40MM	1310-01-317-5948	IV
Mixed Belt (M385A1 & M918), 40MM	1310-01-541-8181	IV
M385A1 Cartridge, 40MM	1310-01-316-9973	IV
M992 Cartridge, 40MM	1310-01-422-1048	III
M585 Cartridge, 40MM	1310-00-922-9784	IV
M661 Cartridge, 40MM	1310-00-541-6148	IV
M662 Cartridge, 40MM	1310-00-541-6149	IV

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# Anticipated RFP Requirements



## Safeguarding Sensitive Conventional AA&E (Cont'd)

- The requirements of DoD 5100.76-M, apply to the following items of AA&E being developed, produced, manufactured, or purchased for, or provided by, the Government:

Item:	NSN:	Sensitivity/Category
MK 19 Mod III Grenade Machine Gun	1010-01-126-9063	II
MK 19 Machine Gun Barrels	1010-01-440-3473	IV
M16 Rifle	1010-01-128-9936	II
M203 Launcher	1010-00-179-6447	III
M203 Barrels	1010-01-376-3342	IV
M550 Escapement	1390-01-245-8888	IV
High Velocity Mann Barrel (HVMB)	P/N 13016122	IV

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# Government Furnished Property (GFP)



## 40mm Grenade Family Systems Procurement

**Jim Terhune**  
**PM-MAS, 40mm Team Lead**

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# Anticipated RFP Requirements

## Government Furnished Property (GFP)



- M385A1 projectiles and M918 projectiles will be provided as Government Furnished Material.
- Government will furnish Calibration and/or Reference Rounds for use in high velocity lot acceptance testing.
- Government will furnish High Velocity Mann Barrels (HVMB) as test equipment to support First Article, Reliability, and/or Acceptance Tests.
- Weapons will NOT be provided as Government Furnished Equipment (GFE); the contractor will be required to procure, safeguard, secure and maintain the MK19 Machine Gun & M203 Grenade Launcher.
- It is anticipated that it will be the Contractor's responsibility for assuring proper weapon maintenance is being performed.

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# Anticipated RFP Requirements

## HVMB



- Maintenance of the HVMB shall be performed by the contractor IAW the Department of the Army Technical Bulletin, 40MM High and Low Velocity Grenade Ammunition Mann Barrel Systems, Operator Information, 13044485. Parts and materials (lubes, cleaners, etc.) shall be IAW with this Technical Bulletin.
- Certificate of Conformance (COC) for any spare parts utilized shall be submitted verifying conformance with the government TDP requirements. (Cert shall state TDP & date, and corresponding First Article Test (FAT) & Lot Acceptance Testing (LAT) information for the applicable weapon lot).
- COCs shall be provided for approval prior to using spare parts, and are required in order to obtain Acceptance Inspection Equipment (AIE) approval prior to conducting any cartridge FATs.
- Inspection and calibration of the HVMB and components shall be performed IAW the Technical Bulletin (13044485) to ensure continued compliance with the TDPL.

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# Anticipated RFP Requirements

## Test Weapons



- Weapons shall be certified by the weapon manufacturer to meet the government TDP requirements. (Cert shall state TDP & date, and corresponding FAT & LAT information for the applicable weapon lot).
- Reports are required in order to obtain AIE approval prior to FAT.
- Inspection and calibration of all weapons and components shall be performed annually to ensure continued compliance with the TDPL.

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# Anticipated RFP Requirements

## Weapon Requirements



### MK19:

- Approved FAT & LAT reports for any MK19 (incl. spare parts) shall be submitted to verify conformance with TDPL 12997550:19200.
- Maintenance shall be performed IAW Operator's Manual (9-1010-230-10) & Maintenance Manual (9-1010-230-23&P).

### M203:

- Approved FAT & LAT reports for any M203 Grenade Launcher (incl. spare parts) shall be submitted to verify conformance with TDPL 12999553:19200
- Maintenance shall be performed IAW Operator's Manual (9-1010-221-10) & Maintenance Manual (9-1010-221-23&P).

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# First Article Acceptance Test (FAAT) / Statistical Process Control (SPC) / Critical Characteristics Clause (CCC)



40mm Grenade Family Systems  
Procurement

Stuart Handley  
Joint Munitions Command (JMC)  
40mm Lead Product Quality Manager (PQM)

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# Anticipated RFP Requirements First Article Test (Contractor Testing)



- FAT is REQUIRED for ALL 40mm family items as called out in the respective TDPLs.
- Must be representative of items to be manufactured at the same facility utilizing the same processes, procedures, and materials to be used in full rate production.
- FAT samples to be tested for compliance of drawing and spec requirements for both listed and unlisted characteristics.
- FATs are NOT anticipated to be waived for any 40mm components. **No producer should assume to be "qualified" or "approved" for purposes of this solicitation.**

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## Government can require FAT when:



1. New producer
2. New component vendor
3. New Equipment/Process
4. Process Change
5. Out of production in excess of 90 days
6. TDP Change
7. As delineated in contract FAT Clause, USG may require complete or partial FAT

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## Anticipated RFP Requirements First Article Test Notification



- When FAT is required, the contractor shall provide:
  - FAT Plan (the FAT Plan shall address the Contractor's proposed approach to conducting all testing as required by the TDP, to include minor and unlisted characteristics); and
  - Completed Summary Matrix for the corresponding component.
- The Contractor shall provide to the PCO at least 15 calendar days advance notice of the scheduled date for final inspection and test of the first article.

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## Tasks required to be completed prior to FAT:



- Quality Plan approval
- General SPC Plan approval
- Contractor provided summary matrix (outlining AIE/AAIE and SPC status)
- AIE/AAIE approval
- FAAT plan submitted
- Notification of intent to conduct FAAT must be provided to the PCO at least 15 calendar days prior to commencement of testing.

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## Component Level FAAT Approval:



- Approval for component level FAATs will not be given.
- Component level FAATs will, at a minimum, require ballistic testing at the end item of purchase (Cartridge) level.
- Contractors must take this into consideration when planning components/materials required for production.

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## Common FAT Questions:



How long does the approval process take?

Per contract, the Government is allowed 45 days from the day the PCO receives the FAT report to approve/disapprove.

What happens if I fail FAT?

Contractor will be asked to perform a Root Cause/Failure Analysis. Once root cause has been identified and corrective action implemented, another FAT can be scheduled.

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## Anticipated RFP Requirements



### Statistical Process Control (SPC)

Requirements:

- SPC General Plan: An over-arching, plant-wide plan which outlines SPC management structure, training policy, charting policy, basis for SPC use, general sampling and charting policies as delineated in the contract clause. Submitted for approval IAW contract or DD1423 instructions.
- Detailed SPC Plan: A SPC plan specific to each item being produced. Addresses process control plan for each major/critical characteristic. If SPC is not used, must provide justification or alternate control plan. Must be submitted to PCO for approval.

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## Detailed SPC Plan Requirements



- Must address each critical and major characteristic identified in the TDP.
- Justification if SPC for any critical or major characteristic not deemed necessary for process control. Justification should include alternate means of control.
- SPC collection and charting method (gage to be used, type of chart, sampling plan, etc.)
- Identified reaction points
- Detailed Plan requirements are clearly spelled out in the contract clause.
- 100% Inspection is not acceptable PROCESS CONTROL. Process control method must include control of variability.

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## Anticipated RFP Requirements



### Critical Characteristics Clause

Definition of a critical characteristic (Per DOD-STD-2101):

A characteristic that analysis indicates is likely, if defective, to create or increase a hazard to human safety, or to result in failure of a weapon system or major system to perform a required mission.

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# CCC Basics



- Production processes are considered to have produced/yielded a critical defect as soon as it is created.
- Process must shut down if above occurs.
- If an approved Critical Plan of Action (CPOA) is in place, contractor may resume production without PCO approval as long as:
  - Threshold number has not been exceeded;
  - Cause is a documented (FMEA) failure mode; and
  - Unit discovered is not a “critical escape”

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# Definition of Critical Escape



- Any critical defect which is discovered beyond its designated point of inspection (DPOI) per approved AIE/AAIE plan.
- CPOA does not apply to Critical Escapes.

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# CCC Plan

- Mandatory plan which shows how critical characteristics for an item will be MANAGED
- What's Important?
  - Failure Mode Effects Analysis (FMEA) or similar analysis for each characteristic showing how defects can be produced
  - Defect rate per characteristic
  - Inspection error rate per characteristic
  - Escape rate risk for each characteristic
  - Item escape rate risk
  - Plan IDs characteristics, how inspected, how defects are tracked and recorded
  - Designated inspection point for each characteristic (flowchart?)
  - How defective units are physically dealt with and periodic audit showing how produced & validated criticals are out of system

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# CPOA Development

- Voluntary submission
- Approved CPOAs allow continued production to a threshold limit based on historical data
- What's Important in a CPOA submission?
  - Current or historical defect rate
  - Inspection reliability
  - Escape rate risk calculation at characteristic level
  - Documented failure modes through FMEA or similar process analysis
  - Corrective action plan per failure mode
  - Long term improvement plan to drive down individual defect levels

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# Producer Challenges



- Knowing & determining defect rate for Critical characteristics
- Knowing & determining inspection reliability for AIE on each Critical
- Tracking item escape rate risk
- Developing Critical Characteristics Control Plans (CCCPs)
- Developing CPOAs

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# Acceptance Inspection Equipment (AIE)



**40mm Grenade Family Systems  
Procurement**

**Dan Schimpf  
ARDEC, Quality Engineering**

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## Anticipated RFP Requirements AIE Rollover Policy



- Offerors should NOT assume roll over of AIE (inclusive of Automated Acceptance Inspection Equipment (AAIE)) approved on other contracts or subcontracts.
- Subsequent to contract award, the Contractor may submit a request to roll over AIE.
- **To be submitted for AIE/AAIE Rollover:**
  - Last approved “Evaluation of Acceptance Inspection Equipment Designs” (EAIED) form
  - Related PCO letter

The Government will draft up a new EAIED form with the new approval date and contract number

If the Government does not have all of the drawings/other

- A note will be added to the EAIED for them to be submitted

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## Anticipated RFP Requirements AIE Rollover Policy (cont'd)



- If the last EAIED cannot be located or all of the gages are not approved
  - A full AIE package will need to be submitted (or a full submission for the gages that are not fully approved)
- New Specification requirements will need to be fully submitted.

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# AIE Review Process



## How the AIE Review Process Works:

1. Prior to FAT, or prior to use for acceptance of production item(s), AIE gage packages must be prepared by the Contractor and sent to the Government (PCO) for review and approval.
2. The Government reviews the AIE gage package and determines whether or not the proposed AIE is acceptable for inspecting the characteristics of item(s) being produced. (45 days per paragraph submission)
3. If approved by the Government, the Contractor is allowed to use that exact equipment and set up to inspect item(s) during FAT and production.
4. If the AIE gage package is not approved by the Government, the Contractor is to revise the package and resubmit it. Return to Step 2.
5. If there are changes to the approved AIE at any point during the contract, the change must be approved by the Government prior to its implementation. If any of the approved AIE is found to be inadequate, the AIE in question must be corrected and approved by the Government.

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# AIE Submissions



- Make/Model/Type/Accuracy for SME
- Gage drawing for custom gages
  - A procedure may be necessary if examination is not self explanatory
  - A calibration certification may assist in the evaluation process.
  - Certifications for critical characteristics are necessary to demonstrate that the gage is properly calibrated (Acceptance and Referee gages).

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# AIE Test Submissions



- AIE Tests (Example: Pull Test or Leak Test )
  - Make/Model/Type/Accuracy of measurement device(s)
  - A procedure describing proper operation and accept/reject criteria
    - » Including Calibration/Verification procedure(s) if applicable
  - Dimensional drawings:
    - » Components of the AIE that perform the inspection (Example: probe dimensions)
    - » Components of the AIE that control/locate the part during inspection (Example: nest and/or interface dimensions),
    - » calibration/verification/reject masters if necessary.
  - Additional info may be required to assess and document the adequacy of the gage (Example: Set up configuration, or calculations used to design the gage or to determine accept/reject criteria)

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# AAIE



AAIE Submissions to be made in accordance with the requirements of Mil-Std-70625. The following slides provide a general outline ONLY

- Descriptions
  - General process flow description (An overview of how the machine and AAIE works)
  - Rate of production
  - Fail safes (what sensors/logic prevent defect escapes.)
- Define inspection methodology/theory
  - For example:
    - Does the Linear Variable Differential Transformer (LVDT) reference from a set “zero” point? Or does it locate off a reference surface?
    - Or how does the camera system work? Does it self locate? Count pixels?

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# AAIE LOGIC and Settings



- Machine/software Logic
  - Normal operation / fail safes / Manual mode / other as appropriate
  - Specifically for AAIE and fail safes
  - Can be in the form of flow charts, process maps or written descriptions
- FMEA for AAIE
  - Who/What/When/Where/Why can go wrong?
- Define limits / settings / variables necessary for AAIE to work
  - AAIE are approved to be used with the settings documented and used at the time of prove out
    - If the settings need to be changed, the AAIE will need to be proven out with the new settings

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# AAIE Drawings



- Dwgs/descriptions of inspection elements.
  - Make, model, type accuracy of gage equipment.
  - Any components of the AAIE that are unique to inspection for your machine or necessary for proper inspection.
    - For example: Probe dimensions or Nest /interface dimensions.
  - Calibration / Verification masters (fully defined)
    - Calibration Certs or calibration process
- Referee Gage
  - Make/Model/Type/Accuracy for SME
  - Gage drawings for custom gages
  - Operation procedure
  - Calibration procedure
  - Calibration Cert
  - R&R if necessary

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# AAIE Procedures



- Operation procedures
  - What does the operator need to know to run the AAIE. Failsafes / timeouts included.
- Calibration procedures
  - Calibration procedure / setup procedure as appropriate
- Recall procedures
  - Production stops per critical, notify quality, and how is traceability maintained.
    - May be more applicable as part of the Referee procedure
- Verification procedures
  - Verification standards at startup, every 4 hrs and end of shift or sample VL VII per mil-std-1916

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# AAIE Proveout



## AAIE acceptance test plan (Per Characteristic)

- Gage R&R
  - What effects the gage and study those variables. For example: linearity, repeatability, nest to nest, before and after calibration, what variables/conditions effect the reading and vary those conditions (temp, light, other ...see FMEA) Should be submitted prior to prove-out.
- 100 rejects in a row.
- 1150 rejects with 115 conforming parts randomly introduced
  - (1/500 gage reliability)
- Fail safes testing.
  - Power out, low air pressure, start up, and others based on FMEA and machine logic
    - To demonstrate that the machine properly handles and safeguards all detected defects.

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# Technical Data Package (TDP) Update Summary



## 40mm Grenade Family Systems Procurement

Devin Reimers  
ARDEC Rock Island, Configuration Management Office

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## Significant HV TDP Changes



### **HV Cartridges:**

- Specifications were updated to add corrosion resistance requirements as major defects
- Added Anodic coating thickness major defects

### **M430A1 Cartridge:**

- M549A1 X-Ray Salter configurations were added
- Added microstructure test for the body
- Added major defects for separation of metal parts during flight and cracked CTG case after firing

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# Significant LV TDP Changes



## **M433 Cartridge/M550 Fuze:**

- Specifications were updated to add corrosion resistance requirements as major defects
- Added Anodic coating thickness major defects
- M550 fuze X-Ray Salter Configurations were added
- Added M550 fuze function test
- 100% AAIE M550 detent inspection added

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# Significant LV TDP Changes (cont'd)



## **Illuminant Cartridges:**

- Created one spec for all Cartridges
- Conventional illuminants (M583A1, M661, and M662) changed so that illuminant candle subassemblies no longer require lot markings

## **M781 Cartridge:**

- Eliminated wirebound box (packing 40 Cartridges in a weatherproof fiber board box enclosed within a pallet box)
- Relaxed tolerances on .38 cal S+W primer pocket

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## Significant LV TDP Changes (cont'd)

### M118/M195 Cartridge Case:

- Specifications were updated to add corrosion resistance requirements as major defects
- Added Anodic coating thickness major defects
- Created stand alone LV Cartridge Case spec (to eliminate duplicate efforts in various cartridge specs)
- Height from base to top of high pressure node changed (from .796 MIN to .790 MIN) to remove conflict between assembly and component drawings
- Added tolerance to straight inner portion of vent holes, location for hardness test, base plug chamfer, powder charge cup

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## Significant HV/LV TDP Changes (cont'd)

### Energetics Specs update:

- Nitroglycerin
- Nitrocellulose
- Lead Styphnate

### Miscellaneous:

- Mann Barrel TDP was released for HV and LV (only required on HV ballistic testing)

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# Recommended Downgrades



Recommended for Downgrade	Affected Rounds	Recommended Frequency
Spilled Powder from Cartridge Case	M433, M583A1, M585, M661, M662 and M992	No Inspection
Depth of Primer Cavity	M430A1, M918, M385A1, M433, M583A1, M585, M661, M662 and M992	100% Major
Verge Assembly Integrity	M918 & M433	100% Major
Pinion Assembly Missing	M430A1, M918 & M433	No Inspection
Verge Assembly Missing	M430A1, M918 & M433	No Inspection
Setback Pin Missing (or Retracted)	M430A1, M918 & M433	No Inspection
Detent Spring Missing	M918 & M433	No Inspection
Setback Spring Missing	M430A1, M918 & M433	No Inspection
Setback Pin Retracted	M918	No Inspection
Setback Pin Not Seated in Bottom of Counterbore of Escapement Housing or Retracted	M433	No Inspection
Setback Pin Hole Blocked	M430A1	No Inspection
Setback Pin Protrusion Short	M430A1	No Inspection
Detent Missing	M918 & M433	No Inspection

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# Recommended Upgrades and Re-definitions



Recommended for Upgrade	Affected Rounds	Recommended Frequency
Missing Powder Charge Cup	M433, M583A1, M585, M661, M662 and M992	100% X-Ray of Sample

Recommended for Redefining	Affected Rounds	Recommended Change
Setback Pin Not Blocking Rotor	M430A1, M918 and M433	Insufficient Setback Pin Overlap With Rotor

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# Small Business Size Requirements



## 40mm Grenade Family Systems Procurement

Nancy Schnoor  
AMSAS-SB  
309.782.8073

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## Small Business Size Standard for 40mm Grenade Family Systems Procurement



- NAICS Code **332993** - Ammunition (except Small Arms) Manufacturing
- Size standard of **1,500 employees**.
  - including employees of all affiliated companies
- 13 CFR 121.106(b)(1).

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## Affiliation



- 13 CFR 121.103
- General Rule of affiliation:  
“Concerns and entities are affiliates of each other when one controls or has the power to control the other, or a third party or parties controls or has the power to control both.” 13 CFR 121.103(a)(1)

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## Affiliation for Joint Ventures



- General rule: Joint venture members are affiliated for size purposes.
- The 40mm grenade procurement is exempt from the general rule because:
  - Employee-based size standard, **and**
  - Total dollar value exceeds \$10 million.

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## Exception to Affiliation for Certain Joint Ventures



- As long as each joint venture member *individually* qualifies as a small business concern under the size standard for the procurement - then the joint venture qualifies as small.
- 13 CFR 121.103(h)(3)(i).

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## When is Size Status Determined?



- Time of submittal of initial offer that includes price. 13 CFR 121.404(a)
- If solicitation is modified such that a new offer is required – size is determined when the new offer including price is submitted.
- Size status set for life of the contract with certain exceptions that require recertification. 13 CFR 121.404(g)

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# When is Recertification Required?



- After contract award:
  - Within 30 days of an approved contract novation,  
13 CFR 121.404(g)(1)
  - Within 30 days of merger or acquisition,  
13 CFR 121.404(g)(2)

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# Ostensible Subcontractor



- 13 CFR 121.103(h)(4)
- “An ostensible subcontractor is a subcontractor that performs primary and vital requirements of a contract . . . or a subcontractor upon which the prime contractor is unusually reliant.”
- An ostensible contractor finding by SBA
  - Usually involves a large business subcontractor, and
  - small business prime no longer small due to joint venture relationship, and
  - the apparently successful offeror ineligible for award

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# Limitations on Subcontracting



- FAR 52.219-14 and 13 CFR 125.6
- Applies to small business set-asides, 8(a) procurements, and other procurements where firm must be small to be considered for award.
- Set percentage of the contract work that must be performed by the small business prime contractor.
- Requirements must be met over the period of performance used by the agency to evaluate proposals as provided in the solicitation.

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## Limitations on Subcontracting(cont'd)



- For supplies, prime contractor must perform:
  - at least 50 percent of cost of manufacturing the supplies or products (not including the costs of materials) - sometimes referred to as the 51% rule
- “Costs of manufacturing” is defined at 13CFR 125.6(e)(3) and includes:
  - Direct costs of fabrication of end item
  - Indirect costs that are allocable and allowable
- “Costs of manufacturing” does not include:
  - Profit
  - “Costs of materials” see definition at 13CFR 125.6(e)(4))

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## Summary

- To be a small business concern:
  - must have 1500 employees or less
- For a joint venture on this procurement to be considered small:
  - Each member of the joint venture must have 1500 employees or less
- Size is determined at time of submittal
- Size status is retained for life of contract with certain exceptions.

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## Questions?

- Questions should be submitted on the Q&A sheets provided. In the general session proceeding lunch, the Government will answer as many questions as time permits.
- Questions subsequent to today's industry day should be submitted via the Q&A form on the website and directed to the Contracting Officer at [julie.a.seaba.civ@mail.mil](mailto:julie.a.seaba.civ@mail.mil), and the Contract Specialist at [traci.l.gerth.civ@mail.mil](mailto:traci.l.gerth.civ@mail.mil) NLT 15 August 2014.

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