# SPRS
## Supplier Performance Risk System

SPRS Evaluation Criteria Manual

SPRS EVALUATION CRITERIA MANUAL
SPRS 3.3

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## SPRS 3.3 Document Acceptance

The undersigned agree this Supplier Performance Risk System (SPRS) Evaluation Criteria Manual Version 3.3 accurately describes the SPRS and the activities surrounding its development.

*Program Manager*

## Record of Versions and Changes

| Document Version # | Version Date | Detailed Description of Change |
|---|---|---|
| 1 | JUL 2019 | Baseline document |
| 2 | MAR 2023 | Enhanced baseline document. Included calculation examples. Updates for SPRS V3.3 |

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# 1.  INTRODUCTION

## 1.1  EVALUATION CRITERIA OVERVIEW

This document is designed to explain the algorithms, data sources, and statistical methods used for risk analysis and vendor performance calculations. SPRS presents this information in a number of reports available to authorized users.

For an overview of these reports refer to the SPRS Overview Tutorial  or the user guides available on the SPRS Reference Material webpage for more information.

## 1.2  SUPPLIER PERFORMANCE RISK SYSTEM (SPRS)

The Supplier Performance Risk System (SPRS) is the Department of Defense's (DoD) single, authorized application to retrieve supplier performance information. SPRS is a web-enabled enterprise application that gathers, processes, and displays data about the performance of suppliers. The Defense Federal Acquisition Regulation Supplement (DFARS) Subpart's 213.106-2 and 213-7000 states that SPRS will be used in the performance evaluation of suppliers. SPRS utilizes suppliers' performance data in areas of product delivery and quality to rate performance and predict potential risk.

## 1.3  AREAS OF RISK ANALYSIS

**1.3.1**  **Supplier**: SPRS provides the acquisition community a score for the overall assessment of supplier performance and supplier risk. The Supplier Risk Score can be used to identify "high risk" suppliers and assess the likelihood of the non-fulfillment of terms of contract, unsuccessful performance, or supplier risk.

A computer algorithm called the SPRS Supplier Engine uses 10 factors of vendor performance information to calculate Supplier Risk Scores. These factors are individually weighted (based on age and relative importance) and summed to produce a numerical and color score for every company which has either a DoD contract or factor data within the last three years.

The Supplier Risk Score is an overall assessment of supplier performance, regardless of Supply Code or business sector. Suppliers' scores are stored and retrieved according to Commercial and Government Entity (CAGE) code; vendor performance information is also gathered by CAGE.

SPRS receives contract award and delivery data from various sources to include but not limited to, the Electronic Data Access (EDA), Federal Procurement Data System (FPDS), Defense Logistics Agency (DLA), Wide Area Workflow (WAWF) and the Mechanization of Contract Administration Services (MOCAS) systems, and other

sources through the Department of the Navy's Product Data Reporting and Evaluation Program (PDREP) system.

Program performance data is also received from various sources to include but not limited to the Defense Contract Management Agency (DCMA), Government-Industry Data Exchange Program (GIDEP) Alerts, the Contractor Performance Assessment Reporting System (CPARS), View Performance (formerly Past Performance Information Retrieval System Report Cards (PPIRS-RC)) systems, Federal Awardee Performance and Integrity Information System (FAPIIS), and the Joint Deficiency Reporting System (JDRS).

The Supplier Risk Score described herein is the score reported to supplier and government users through the standalone Supplier Risk Report.

**1.3.2  Price:** Price Risk determines whether a proposed price is consistent with historical prices paid for that item. SPRS calculates an "Expected Range" based on the population of historical prices for a particular item.  Bids may be entered by the user and SPRS will report if the bid falls in or out of the Expected Range ("within range", "high" or "low"). The SPRS Price Engine uses item pricing history data from 01 January 2010 to present.

**1.3.3  Item:** Item Risk is based on additional risks associated with employing an item or the increased risks associated with procuring an item which may result in safety issues, mission degradation, or monetary loss. The SPRS Item Risk Report can be used to review the warnings provided and risk mitigation strategies identified in the SPRS application.

## 2.  DOCUMENT-WIDE FORMULAS

### 2.1  AGE-WEIGHT MULTIPLIER (AWM) CALCULATION

The SPRS Age-Weight Multiplier (AWM) reduces the scoring impact of supplier performance information gradually over the three (3) year scoring period. Delivery records are weighted based on the number of calendar days since shipping/receiving or contract termination.  Quality records and factor records are weighted based on the number of calendar days since the record became effective. As a record ages, its contribution to the delivery score, quality classification or supplier risk score diminishes, vanishing at three years.

$$\text{AWM} = \frac{1{,}095 - \text{Record Age(Days)}}{1{,}095}$$

**Equation 1: Age-Weight Multiplier (AWM)**

- NOTE:   3 years  = 1,095 days
                     = 1,096 days for leap years

### 2.2  CLASSIFICATION DATE

The Classification Date is the date the scores were last updated. SPRS runs all quality, delivery, and risk calculations on a daily basis.

### 2.3  SCALING FACTOR

All scored factors are normalized, divided by, the SPRS Scaling Factor, to allow comparisons of large and small businesses. The Scaling Factor is calculated by summing the unique count of Supply Codes within the vendor's base contracts, during the three year reporting timeframe from the contract signed date. Base contract and Supply Code data is received from the Federal Procurement Data System (FPDS).

**Example**:

| 13-Digit Base Contract | Supply Code |
|---|---|
| Contract1234A | 4730 |
| | 4820 |
| Contract1234B | 3020 |
| Contract1234C | F103 |
| **Scaling Factor =** | **4** |

**Table 1: Scaling Factor Calculation Example**

- NOTE: If there is no contract data available, a value of one (1) is used for the denominator.

## 3.  QUALITY AND DELIVERY PERFORMANCE

### 3.1  WEIGHTED QUALITY PERFORMANCE

**3.1.1**  **Quality Performance Records:** A Supplier's Quality Performance is organized by Supply Code: Federal Supply Classification (FSC) / Product Service Code (PSC) and associated North American Industry Classification System (NAICS) code. SPRS scores Quality Performance Records dated within the last three (3) years. The following are the Quality Performance Records to be used and the associated weights for each:

| Record | Service | Positive Weight | Negative Weight |
|---|---|---|---|
| Product Quality Deficiency Reports (PQDRs) – Category 1 or 2 | All | N/A | - 2.0 (Cat 1) <br> - 1.5 (Cat 2) |
| Supply Discrepancy Reports (SDRs) | All | N/A | - 1.0 |
| GIDEP Alerts | All | N/A | - 1.0 (Critical) <br> - 0.7 (Major) <br> - 0.2 (Minor) |
| Bulletins | Navy | N/A | - 1.0 |
| Surveys (Excluding Pre-Award Surveys) | DCMA and Navy | + 0.7 | - 0.7 |
| Test Reports (1st Article, Production, etc.) | Navy | + 0.5 | - 0.5 |
| Material Inspection Records (MIRs)* | Navy | + 1.0 | - 1.0 (Critical) <br> - 0.7 (Major) <br> - 0.2 (Minor) |
| Received Delivery w/No Associated Quality Record** | All | + 0.1 | N/A |

**Table 2: Quality Performance Records and Weight Factors**

| *Material Inspection Records (MIRs) Inspection Attribute(s) | Risk Tier | Risk Tier Weights |
|---|---|---|
| Visual/Package/Preservation | 1 | +/- 0.1 |
| Technical/Documentation/Labeling | 2 | +/- 0.2 |
| Quality/Manufacturing/Design | 3 | +/- 0.3 |
| Non-functional/Damage/Chemical | 4 | +/- 0.4 |

**Table 3: Material Inspection Record Tiers**

*MIR weighting is determined by adding the Positive or Negative Weight to the associated risk tier. If an MIR has multiple inspection attributes, the one with the highest risk tier value is used.

Example 1: Negative MIR, Critical + Tier 4 = - 1.4
Example 2: Positive MIR + Tier 2 = 1.2

**Received Delivery w/No Associated Quality Records will receive a + 0.1 positive credit that will apply starting 90 days after the delivery has been received. This credit will age weight starting on the day it was applied. If at a future date, a quality record is assigned to that delivery, the age-weighted positive credit will be removed and replaced by that other Quality Record. The positive credit will last as long as the delivery remains in SPRS. To determine if a delivery has an associated quality record, the first 13 digits of the contract or delivery order must match a quality record within the same Supply Code in SPRS.

### 3.1.2  Quality Performance Score Calculation:

$$\text{Quality Performance Score} = \frac{\sum \text{Positive weighted data} + \sum \text{Negative weighted data}}{\text{Delivery Line Item Total by Supply Code}}$$

**Equation 2: Quality Performance Score**

- <u>NOTE</u>: If there is no delivery data available, a value of one (1) is used for the denominator.

**Example**: Assume all the below quality records are within the same Supply Code and the delivery count within that same Supply Code is 2.

| Record | Days since Report | Weight | Age-Weighted Score |
|---|---|---|---|
| Bulletin | 800 | - 1.0 | - 0.270 |
| GIDEP Alert (minor) | 25 | - 0.2 | - 0.195 |
| Material Inspection Records (MIRs) (Major + Tier 3) | 42 | - 1.0 [- 0.7 + (- 0.3)] | - 0.962 |
| Material Inspection Records (MIRs) (Positive + Tier 2) | 1,000 | +1.2 (1.0 + 0.2) | + 0.105 |
| PQDR (Category 1) | 125 | - 2.0 | - 1.772 |
| Surveys (Excluding Pre-Award Surveys) | 300 | + 0.7 | + 0.508 |
| Test Reports (1st Article, Production, etc.) | 270 | + 0.5 | + 0.377 |
| Supply Discrepancy Reports (SDRs) | 950 | - 1.0 | - 0.133 |
| Received Delivery w/No Associated Quality Record | 1 | + 0.1 | + 0.1 |
| | | Sum of Negative Quality Data: | - 3.332 |
| | | Sum of Positive Quality Data: | 1.090 |

**Table 4: Quality Performance Score within Supply Code Example**

$$\text{Quality Performance Score} = \frac{1.090 + (-3.332)}{2} = \frac{-2.242}{2} = \boxed{-1.121}$$

**3.1.3** **Quality Factor Color Score**: Each Supply Code for which there is quality performance data will be ranked by magnitude and assigned a color. Color is assigned by top five percent (Blue), next 10 percent (Purple), next 70 percent (Green), next 10 percent (Yellow), and last five percent (Red). In this calculation, the companies are classified based on quality performance comparisons for all competitors within a Supply Code.

| QUALITY & SUPPLIER RISK COLOR LEGEND | |
|---|---|
| Blue: | Top 5% |
| Purple: | Next 10% |
| Green: | Next 70% |
| Yellow: | Next 10% |
| Red: | Lowest 5% |
| No scorable data | * |
| No data in this category | * |

**Figure 1: SPRS Quality Color Legend**

- If the Quality Performance Score is equal for all suppliers in a Supply Code, the entire group will be classified as Green.

- If a supplier has only positive Quality Records in a Supply Code, the lowest possible Quality Color band they will receive is Green.

- If there are multiple suppliers with the same Quality Performance Score within the Supply Code, they will all be classified in the same Quality Color band.

- If a supplier has only unreceived or terminated delivery data and no Quality Performance Score for a given Supply Code, that contractor will be classified within the white color band and display an * (no scorable data).

- If a supplier has received delivery data but no Quality Performance Score for a given Supply Code, that contractor will be classified as Green(*).

- Quality Color is displayed in the SPRS Summary Report.

## 3.2  WEIGHTED DELIVERY SCORE

**3.2.1** **Weighted Delivery Score Records:** A supplier's Weighted Delivery Score is organized by Supply Code. Delivery records are identified by Contract Procurement Instrument Identifier (PIID), Contract Line Item Number (CLIN) or Subcontract Line Item Number (SLIN), and Supply Code. Delivery Record information is transmitted into SPRS once the Due Date has passed, unless receiving information is included for a delivery with a future Due Date. No duplicate deliveries are allowed.

**3.2.2** **Weighted Delivery Score Calculation:** Suppliers receive a Weighted Delivery Score for every Supply Code with Delivery Records. The Weighted Delivery Score is calculated based on a weighted combination of the percentage of contract line items

(CLINs/SLINs) with on-time deliveries and the average days late for all deliveries within a specific Supply Code. The number of days late is the delta between the contracted Due Date and the Delivery Date. On-time deliveries are given additional weight (60%) and late deliveries are given less weight (40%).

If there is no delivery data within a Supply Code but quality data is available, "No Data" will display in the Weighted Delivery Score column in the SPRS Summary Report.

Records are sorted as positive or negative. Early and on-time deliveries are positive. Late, terminated, and open (expected but not yet received), deliveries are negative.

**Contract Termination:**
Termination for Convenience (T4C): Contracts terminated at the convenience of the Government (T4C) will not be considered in the delivery score calculations.

Termination for Default (T4D): Contracts terminated for default will be assessed Days Late as follows:
- Code K (180 days late)
- Code D (360 days late)

**Delivery AWM:**
Weighted Delivery Age-Weight Multiplier (AWM) is based on a records Due Date and does not begin until the Due Date has passed the Classification Date. Age weighting for the Weighted Delivery Score has various rules to account for the following scenarios:

a. Early deliveries and deliveries made on the Due Date: the supplier receives full credit by assigning an age weight of one (1) until the Due Date has passed the Classification Date.

b. Late Deliveries: Deliveries received after the Due Date, age weighting begins on the record's Due Date.

c. Early Terminated: Cancelled before or on the Due Date, age weighting begins on the Cancellation Date.

d. Late Terminated: Cancelled after the Due Date, age weighting begins on the Due Date.

e. Unreceived deliveries that were not cancelled, where the Due Date is in the past, are assigned an age weight of one (1).

**Calculation Elements:**

- On-time Delivery Value = 1 × Age-Weight Multiplier (AWM)

- Average Days Late Delivery Value = (# Days Late) × AWM

- AWM for All Deliveries = $\Sigma$ AWMs

- On-time Weight = 0.6

- On-time Score = $100 \times \dfrac{\Sigma \text{ On}-\text{Time Delivery Value}}{\text{AWM for All Deliveries}}$

- Average Days Late Weight = 0.4

- Average Days Late Score = $100 - \dfrac{\Sigma \text{ Average Days Late Delivery Values}}{\text{AWM for All Deliveries}}$ or 0, whichever is greater.

**Weighted Delivery Score** = (On-time Weight × On-time Score) + (Average Days Late Weight × Average Days Late Score)

### Equation 3: Weighted Delivery Score

**Example**: Within a 3-year period Company X has made the following deliveries:

Classification Date: 1-Jun-2020

| Due Date | Termination Code | Receipt Date / Termination Date | Days Early / Days Late | Days Since Due Date / Termination Date | Age-Weight Multiplier (AWM) | On-Time Delivery Value | Days Late Delivery Value |
|---|---|---|---|---|---|---|---|
| 10-Jun-20 | | 1-Jun-20 | + 9 | - 9 | + 1 | + 1 | |
| 1-Jun-20 | | 1-May-20 | + 31 | 0 | + 1 | + 1 | |
| 1-Apr-20 | | 1-May-20 | - 30 | + 61 | + 0.944 | | + 28.330 |
| 1-May-20 | K | 1-Apr-20 | - 180 | + 61 | + 0.944 | | +169.982 |
| 1-May-20 | D | 1-Jun-20 | - 360 | + 31 | + 0.972 | | + 349.818 |
| 1-May-20 | | | | + 31 | + 1 | | + 31 |
| | | | | Sum of Values = | + 5.860 | + 2 | + 579.130 |

### Table 5: Weighted Delivery Score Example

**Example Continued**: Using the information from Equation 3 and Table 5 above:

$$\left( 0.6 \times \left( 100 \times \left( \frac{2}{5.860} \right) \right) \right) + \left( 0.4 \times \left( 100 - \left( \frac{579.130}{5.860} \right) \right) \right) = 20.950$$

**Weighted Delivery Score =** $\boxed{21}$

## 4. SUPPLIER RISK SCORE

### 4.1 SUPPLIER RISK SCORE OVERVIEW:

**4.1.1 Supplier Risk Score:** The Supplier Score is equal to the summation of 10 Supplier Risk Factors.

$$\textbf{Supplier Risk Score} = \sum \text{Risk Factors}$$

**Equation 4: Supplier Risk Score**

| Supplier Risk Factor | Source | Baseline Points | Category |
|---|---|---|---|
| Suspected Counterfeit | GIDEP | 100 | Always Negative |
| Quality Score Rankings | SPRS | 0 | Always Positive |
| Overall Delivery Score | SPRS | 0 | Always Positive |
| Contractor Performance Assessment Reporting System (CPARS) | CPARS | 0 | Positive/Negative |
| Corrective Action Requests (CAR) | DCMA, PDREP | 60 | Always Negative |
| Corrective Action Plans (CAP) | DCMA, PDREP | 0 | Positive/Negative |
| Surveys | DCMA, PDREP | 0 | Positive/Negative |
| Program Assessment Reports (PAR) | DCMA,PDREP | 0 | Positive/Negative |
| Government-Industry Data Exchange Program (GIDEP) (non-counterfeit) | GIDEP | 10 | Always Negative |
| Federal Awardee Performance and Integrity Information System (FAPIIS) | CPARS | 50 | Always Negative |

**Table 6: Supplier Risk Factors**

**4.1.2 Supplier Risk Factor Categories:** Factor data is divided into three categories: "Always Negative," "Always Positive", and "Positive/Negative."

- **Always Negative**: These data factors will always lower the resulting score. Each Always Negative factor is given a starting score; any additional data lowers that score for that factor. The lowest possible score for each Always Negative factor is zero. If a vendor has no Always Negative data, it receives the highest possible score.

- **Always Positive**: These data factors always increase the resulting score. If a vendor has no Always Positive data, the resulting score is not affected.

- **Positive/Negative**: These data factors can increase or decrease the resulting score based on the nature of the factor. If a vendor has no Positive/Negative data, the resulting score is not affected.

### 4.2  SUPPLIER RISK ENGINE:

**4.2.1**   **Supplier Engine:** The Supplier Risk Engine calculates the score for each factor based on the age of the data, the Scaling Factor and the assigned weight of each factor's contribution to the Supplier Risk Score.

Always Negative and Positive/Negative data utilize the Scaling Factor. This tends to normalize, but not equalize, supplier scores based on magnitude of business with the government. The underlying algorithms for Always Positive data already take this into account, so this scaling is not applied.

Always Negative and Positive/Negative data are age-weighted on a daily basis. As a result, each newer (i.e., more recent and relevant) data point contributes more to the Supplier Risk Score than older data. The underlying algorithms for Always Positive data already take this into account, so this age-weighting is not applied.

A graphic depicting each factor's calculation and relative weight of importance is shown below:



**Figure 2: Supplier Engine Factors**

The Supplier Engine ranks the supplier risk scores by magnitude and assigns a color score to each supplier according to the SPRS 5-color scoring standard. The color score is a percentile ranking.

| SUPPLIER COLOR LEGEND | |
|---|---|
| Blue: | Top 5% |
| Purple: | Next 10% |
| Green: | Next 70% |
| Yellow: | Next 10% |
| Red: | Lowest 5% |
| Grey: | Excluded |
| Black: | No Score |

**Figure 3: Supplier Color Legend**

Suppliers with higher Supplier Risk Color Scores are considered to have a lower risk of poor contract performance.

The threshold values between colors can change each time the Supplier Engine is run. As a result, suppliers with numerical scores near the threshold values may have a change in color score without a corresponding change in numerical score. Suppliers with the same numerical score will always have the same color score.

Suppliers that have no scored factor data but have at least one contract reported in FPDS do not receive a numerical score but have a Green color score. The system will display an asterisk (*) in place of a numerical score. This is a neutral rating, similar to how SPRS displays quality classifications for companies with no quality records but some delivery records.

Suppliers that have no scored factor data and have no contracts reported to FPDS receive no numerical or color score. The system will report this as No Score. If a vendor is excluded from selling to the government in SAM, this vendor's color score will be shown as Grey and withheld from ranking.

## 5.   SUPPLIER RISK FACTORS

### 5.1  SUSPECTED COUNTERFEIT FACTOR

**5.1.1   Suspected Counterfeit Factor**: This factor is Always Negative and the information is pulled from Government-Industry Data Exchange Program (GIDEP) Agency Action Notices. GIDEP contains information on equipment, parts, and assemblies including those suspected to be counterfeit. After visual inspections and, in many cases, extensive testing and analysis, GIDEP members provide fact-based reports on items received that are suspected to be counterfeit.

**5.1.2   Suspected Counterfeit Values**:
  a.   Starting Score is always 100 points
  b.   First Incident (**-** 25 points)
  c.   Each Subsequent Incident (**-** 50 points)

**5.1.3   Suspected Counterfeit Factor Score**: The Suspected Counterfeit Factor Score is calculated by first identifying all Suspected Counterfeit reports dated within the last three (3) years. Each record is assigned the appropriate value listed above and age-weighted. The age-weighted point deductions are then summed and normalized by the Scaling Factor. That sum is then subtracted from the starting score.

**Example:** Scaling Factor is 10 for the example below

| Days Since Report | Age-Weighted Multiplier (AWM) | Suspected Counterfeit Point Deduction | Age-Weighted Points |
|---|---|---|---|
| 850 | 0.224 | - 25 | - 5.61 |
| 800 | 0.270 | - 50 | - 13.50 |
| 360 | 0.672 | - 50 | - 33.58 |
| 200 | 0.818 | - 50 | - 40.88 |
| | | **Point Total =** | **- 93.57** |

**Table 7: Suspected Counterfeit Factor Example**

Apply Scaling Factor = $\dfrac{(-93.57)}{10}$ = **-** 9.36

Subtract from Starting Score = 100 + (**-** 9.36)

**Suspected Counterfeit Factor Score** = $\boxed{\textbf{90.64}}$

### 5.2  OVERALL QUALITY FACTOR

**5.2.1**  **Overall Quality Factor**: The Quality Factor calculates the Supplier's overall quality performance for the Supply Codes with quality records. This factor is an Always Positive score.

**5.2.2**  **Overall Quality Factor Ranking**: As described in the Quality Performance section; once the Quality Performance Score within each Supply Code is calculated, it is compared against other suppliers within that Supply Code and assigned a point total based on their ranking against the other suppliers as follows:
a. Top Third (100 points)
b. Middle Third (50 points)
c. Bottom Third (0 points)

Each Supply Code ranking is then weighted based on the total number of Quality records within that Supply Code and summed to determine the Overall Quality Factor Score.

The Ranking Weight is determined by the number of records within the Supply Code compared to the total records within all Supply Codes for that same supplier.

**5.2.3**  **Overall Quality Factor Score** = $\dfrac{\Sigma\,(\text{Quality Record Count} \times \text{Ranking Points})}{\text{Total Quality Record Count}}$

**Equation 5: Overall Quality Factor Score**

| Supply Code | Quality Record Count | Ranking Points | Ranking Weight | Weighted Ranking Points |
|---|---|---|---|---|
| 1450 | 200 | Top (100) | 76.3% | + 20,000 |
| 1910 | 50 | Middle (50) | 19.1% | + 2,500 |
| 5335 | 10 | Top (100) | 3.8% | + 1,000 |
| 5910 | 1 | Bottom (0) | 0.4% | 0.0 |
| 6820 | 1 | Middle (50) | 0.4% | 0.0 |
| **Total:** | **261** | $\dfrac{\Sigma\,(\textbf{Quality Record Count} \times \textbf{Ranking Points})}{\textbf{Total Quality Record Count}} =$ | | $\dfrac{23,500}{261}$ |
| | | **Overall Quality Factor Score =** | | **90.04** |

**Table 8: Overall Quality Factor Score Example**

### 5.3  OVERALL DELIVERY FACTOR

**5.3.1**   **Overall Delivery Factor:** The Overall Delivery Factor calculates the supplier's Weighted Delivery Score regardless of Supply Code. This factor is an Always Positive score. The contractor's Overall Delivery Score is calculated using a weighted combination of the percentage of Contract Line Items (CLINs) with on-time deliveries and the average days late for all deliveries.

**5.3.2**   **Overall Delivery Factor Score:** As described in the Weighted Delivery Factor Score section, the Overall Delivery Factor Score is calculated using all deliveries made by the Supplier regardless of Supply Code.

## 5.4  CONTRACTOR PERFORMANCE ASSESSMENT REPORTING SYSTEM (CPARS) FACTOR

**5.4.1  Contractor Performance Assessment Reporting System (CPARS) Factor:** A CPARS is an evaluation of a contractor's performance and provides a record on a given contract during a specific period of performance. This factor is a Positive/Negative score.

**5.4.2  CPARS Record**: A CPARS record evaluates contractors in six areas: Quality, Schedule, Cost Control, Management, Utilization of Small Business, and Regulatory Compliance. The ratings are converted to numerical values as follows:
a.  Exceptional (+ 10 points)
b.  Very Good (+ 5 points)
c.  Satisfactory (+ 1 point)
d.  Marginal (- 5 points)
e.  Unsatisfactory (- 10 points)

The CPARS record score is calculated by summing the rating values and dividing the result by the number of ratings received.

**Example**: Individual CPARS Scoring Report



Example
CPARS record for Contractor X

| Evaluation Area | Rating | Value |
|---|---|---|
| Quality | VERY GOOD | 5 |
| Schedule | VERY GOOD | 5 |
| Cost Control | SATISFACTORY | 1 |
| Management | MARGINAL | -5 |
| Utilization of Small Business | N/A | |
| Regulatory Compliance | EXCEPTIONAL | 10 |

Average of five rated areas = +3.2

Score = +3.2 pts

**Table 9: CPARS Record Example**

**5.4.3  CPARS Factor Score:** The CPARS Factor Score is calculated by age-weighting each CPARS report a supplier has dated within the last three (3) years. Those age-weighted scores are then added together and normalized by the Scaling Factor.

**Example**: Scaling Factor is 10 for the example below

| Days Since Report | Age-Weighted Multiplier (AWM) | CPARS Report Score | Age-Weighted Points |
|---|---|---|---|
| 850 | 0.224 | - 2.9 | - 0.65 |
| 500 | 0.544 | + 3.2 | + 1.74 |
| 360 | 0.672 | + 8.75 | + 5.88 |
| 200 | 0.818 | + 5.4 | + 4.41 |
| | | **Point Total =** | **+ 11.38** |

**Table 10:  CPARS Factor Score Example**

$$\text{Apply Scaling Factor} = \frac{11.38}{10}$$

**CPARS Factor Score =** $\boxed{1.14}$

## 5.5  CORRECTIVE ACTION REQUEST (CAR) FACTOR

**5.5.1   Corrective Action Requests (CARs) Factor:** CARs are issued to the supplier to identify and correct instances of noncompliance with established methods for processing product, controlling quality systems or violation of contract/purchase order requirements. This is an Always Negative factor. CARs are reported in the DCMA's Supplier Risk System (SRS) in PDREP.

**5.5.2   CAR Values:**
a.  Starting Score is always 60
b.  Level 1 CAR (**-** 1 point)
c.  Level 2 CAR (**-** 10 points)
d.  Level 3 CAR: (always calculated last)
   - First Occurrence (**-** 30% of current CAR Score)
   - Second Occurrence (**-** 65% of current CAR Score)
   - Third Occurrence (**-** 100% of current CAR Score)
e.  Level 4 CAR (**-** 50 points)

**5.5.3   CAR Factor Score:** The CAR Factor Score is calculated by first identifying all CARs dated within the last three (3) years. Each Level 1, 2, and 4 CAR is assigned the appropriate value listed above and age-weighted. Those age-weighted scores are summed and normalized by the Scaling Factor. That scaled score is then subtracted from the starting score. The last step is to apply the Level 3 CARs by reducing the score by the age-weighted percentage defined above based on number of occurrences.

If the calculation yields a negative number, then 0 is assigned as the score.

**Example**: Scaling Factor is 10 for the example below

| Days Since Report | Age-Weighted Multiplier (AWM) | CAR Level | Point Deduction | Age-Weighted Points |
|---|---|---|---|---|
| 1,000 | 0.088 | Level 1 | **-** 1 | **-** 0.09 |
| 720 | 0.343 | Level 2 | **-** 10 | **-** 3.43 |
| 200 | 0.818 | Level 4 | **-** 50 | **-** 40.88 |
| 5 | 0.995 | Level 2 | **-** 10 | **-** 9.95 |
| | | | **Point Total =** | **-** 54.35 |

**Table 11: CAR Factor Score Example**

Apply Scaling Factor = $\dfrac{(-54.35)}{10}$ = **-** 5.43

Subtract from Starting Score = 60 + (**-** 5.43) = 54.57

Apply Level 3 CAR(s):

| Days Since Report | Age-Weighted Multiplier (AWM) | CAR Level | Point Deduction | Age-Weighted Points |
|---|---|---|---|---|
| 300 | 0.726 | Level 3 (- 30%) | - 16.35 | - 11.87 |

**Table 12: CAR Factor Score Example Continued**

**CAR Factor Score** = 54.57 + (- 11.87) = | **42.69** |

## 5.6  CORRECTIVE ACTION PLAN (CAP) FACTOR

**5.6.1**   **Corrective Action Plan (CAP) Factor:** A planned response provided by the supplier in response to a CAR. If such a plan is required, it will be scored. This is a Positive/Negative factor. CAPs are reported in the DCMA's SRS in PDREP.

**5.6.2**   **CAP Values:**
   a.   Record Accepted and on time (+1 point)
   b.   Record Rejected or late (**-** 1 point)

**5.6.3**   **CAP Factor Score:** The CAP Factor Score is calculated by first identifying all CAPs dated within the last three (3) years. Each CAP is assigned the appropriate value listed above, and age-weighted. Those age-weighted scores are summed and normalized by the Scaling Factor.

**Example**: Scaling Factor is 10 for the example below

| Days Since Report | Age-Weighted Multiplier (AWM) | Point Change | Age-Weighted Points |
|---|---|---|---|
| 850 | 0.224 | + 1 pt. | + 0.22 |
| 500 | 0.544 | + 1 pt. | + 0.54 |
| 360 | 0.672 | + 1 pt. | + 0.67 |
| 200 | 0.818 | - 1 pt. | - 0.82 |
| | | **Point Total =** | **+ 0.62** |

**Table 13: CAP Factor Score Example**

Apply Scaling Factor = $\dfrac{0.62}{10}$

**CAP Factor Score** = $\boxed{\textbf{0.062}}$

## 5.7  SURVEY FACTOR

**5.7.1  Pre/Post-Award Survey Factor**:  An evaluation by a surveying activity of a prospective or selected contractor's capability to perform under the terms of a proposed or awarded contract. This is a Positive/Negative factor. Surveys are reported in PDREP.

**5.7.2  Survey Values:**
    a.  **+ 1 point** per record for:
- Award
- Acceptable
- Partial Award

    b.  **- 1 point** per record for:
- No Award
- Unacceptable

**5.7.3  Survey Factor Score:** The Survey Factor Score is calculated by first identifying all Surveys dated within the last three (3) years. Each Survey is assigned the appropriate value listed above and age-weighted. Those age-weighted scores are summed and normalized by the Scaling Factor.

**Example**: Scaling Factor is 10 for the example below

| Days Since Report | Age-Weighted Multiplier (AWM) | Point Change | Age-Weighted Points |
|---|---|---|---|
| 850 | 0.224 | + 1 pt. | + 0.224 |
| 500 | 0.544 | + 1 pt. | + 0.543 |
| 360 | 0.672 | + 1 pt. | + 0.671 |
| 200 | 0.818 | - 1 pt. | - 0.817 |
| | | **Point Total =** | **+ 0.62** |

**Table 14: Survey Factor Score Example**

Apply Scaling Factor = $\dfrac{0.62}{10}$

**Survey Factor Score =** $\boxed{\textbf{0.062}}$

### 5.8  PROGRAM ASSESSMENT REPORT (PAR) FACTOR

**5.8.1  Program Assessment Report (PAR) Factor:** The PAR is an independent DCMA assessment of contractor performance to include predictive analysis. The PAR consists of three categories, Cost, Schedule, and Performance. The PAR is a Positive/Negative factor. PARs are reported in the DCMA's SRS in PDREP.

**5.8.2  PAR Values:**
   a.  Green (+ 1 point)
   b.  Yellow (0 points)
   c.  Red (- 1 point)

**5.8.3  PAR Record Score**: The PAR Record Score is the sum of all Evaluation Areas within the PAR.

<div align="center">

**Example**
**PARs for Contractor X**

| Evaluation Area | Green | Yellow | Red |
|:---:|:---:|:---:|:---:|
| Cost | 3 | 5 | 1 |
| Schedule | 1 | 5 | 1 |
| Performance | 2 | 1 | 0 |
| Total | 6 | 11 | 2 |
| **Value** | **6** | **0** | **-2** |

Score  = 6 + 0 − 2
= **4 pts**

</div>

**Table 15: PAR Score Example**

**5.8.4  PAR Factor Score:** The PAR Factor Score is calculated by first identifying all PARs dated within the last three (3) years. Each PAR score is age-weighted, summed, and normalized by the Scaling Factor.

**Example**: Scaling Factor is 10 for the example below

| Days Since Report | Age-Weighted Multiplier (AWM) | PAR Report Score | Age-Weighted Points |
|:---:|:---:|:---:|:---:|
| 850 | 0.224 | + 6 | + 1.35 |
| 500 | 0.544 | + 15 | + 8.16 |
| 360 | 0.672 | + 2 | + 1.34 |
| 200 | 0.818 | - 8 | - 6.54 |
| | | **Point Total =** | **+ 4.31** |

**Table 16: PAR Factor Score Example**

Apply Scaling Factor = $\dfrac{4.31}{10}$

**PAR Factor Score =** $\boxed{\textbf{0.431}}$

### 5.9  GOVERNMENT-INDUSTRY DATA EXCHANGE PROGRAM (GIDEP) (NON-COUNTERFEIT) FACTOR

**5.9.1  Government-Industry Data Exchange Program (GIDEP) Factor:** GIDEP is a cooperative data exchange between government and industry participants for sharing and use of existing engineering and failure data. This is an Always Negative factor.

**5.9.2  GIDEP Values:**
   a.  Starting Score is always 10 points
   b.  Each Record (**-** 1 point)

**5.9.3  GIDEP Factor Score:** The GIDEP Factor Score is calculated by first identifying all GIDEP records dated within the last three (3) years. Each report receives a value of **-** 1 and is age-weighted, summed, and normalized by the Scaling Factor. That score is then deducted from the base score. If the calculation yields a negative number, then 0 is assigned as the score.

**Example**: Scaling Factor is 10 for the example below

| Days Since Report | Age-Weighted Multiplier (AWM) | Point Reduction | Age-Weighted Points |
|:---:|:---:|:---:|:---:|
| 850 | 0.224 | - 1 pt. | - 0.22 |
| 500 | 0.544 | - 1 pt. | - 0.54 |
| 360 | 0.672 | - 1 pt. | - 0.67 |
| 200 | 0.818 | - 1 pt. | - 0.82 |
| | | **Point Total =** | **- 2.26** |

**Table 17: GIDEP Factor Score Example**

Apply Scaling Factor = $\dfrac{(-2.26)}{10}$ = **-** 0.226

Subtract from Starting Score = 10 + (**-** 0.226)

**GIDEP Factor Score =**  | 9.77 |

### 5.10 FEDERAL AWARDEE PERFORMANCE AND INTEGRITY INFORMATION SYSTEM (FAPIIS) FACTOR

**5.10.1  Federal Awardee Performance and Integrity Information System (FAPIIS) Factor:** A database that contains information to support award decisions as required by the Federal Acquisition Regulation (FAR). This is an Always Negative factor.

**5.10.2  FAPIIS Values:**
 a.  Starting Score is always 50
 b.  **-** 10 points per record for:
   • DoD Determination of Contractor Fault (F)
   • Defective Pricing (P)
 c.  **-** 25 points for:
   • Termination for Cause (C)
   • Termination for Default (D)

**5.10.3  FAPIIS Factor Score:** The FAPIIS Factor Score is calculated by first identifying all FAPIIS reports dated within the last three (3) years. Each report receives a value as defined above and is age-weighted, summed, and scaled based on total number of contracts by that supplier. That score is then deducted from the base score of 50. If the calculation yields a negative number, then 0 is assigned as the score.

**Example**: Scaling Factor is 10 for the example below

| Days Since Report | Age-Weighted Multiplier (AWM) | Point Deduction | Age-Weighted Points |
|---|---|---|---|
| 1,000 | 0.088 | **-** 10 points | **-** 0.88 |
| 720 | 0.343 | **-** 10 points | **-** 3.43 |
| 300 | 0.726 | **-** 25 points | **-** 18.16 |
| 200 | 0.817 | **-** 25 points | **-** 20.44 |
| 5 | 0.995 | **-** 10 points | **-** 9.95 |
| | | **Point Total =** | **-** 52.86 |

**Table 18: FAPIIS Factor Score Example**

Apply Scaling Factor = $\dfrac{(-52.86)}{10}$ = **-** 5.286

Subtract from Starting Score = 50 + (**-** 5.286)

**FAPIIS Factor Score** = $\boxed{44.71}$

## 6. PRICE RISK AND CONFIDENCE SCORING

### 6.1 PRICE RISK

6.1.1 **Price Risk**: Price Risk determines whether a proposed price is consistent with unique historical prices paid for that item and is depicted by high, low or within range, when compared to the Expected Range. Three data repositories, tables, are required to calculate the Average Price and Expected Range for an item:

**History Table**: A data table built from contract award and delivery data in PDREP. This table holds contract information and unit prices for items with a unique material identification (ID) (e.g., National Stock Number (NSN), Manufacturer CAGE & Part Number, etc.) such that:
- The contract award date is 01 January 2010 or later,
  ***And***
- The combination of the 13-digit contract number, material ID and unit price is unique (counted once in the Average Price calculation).

**Price Table**: This table retains the Average Price, the upper and lower control limits of the Expected Range and the Average Price Confidence score for each item found in the History Table.

**Escalation Tables**: A set of escalation tables contains the calculated monthly escalation (inflation) factors for each Supply Code in the Price Table.

6.1.2 **Price Engine:** The SPRS Price Engine populates the Price Table using the following method:

**Purchases**: For a particular item, the Price Engine starts by determining how many times the item has been purchased (i.e., how many transaction records exist in the History Table for the material ID).

N = # of times the item is purchased

If any of the items prices are stored in fractions of cents, the Price Engine retains the greatest number of significant digits found in any transaction. Price data will be displayed to this number of digits, indicating to the user that fractions of cents have been used in past purchases of the item.

**Escalation Factor:** Each month, the Price Engine uses every item's Supply Code to select the appropriate data set from the U.S. Bureau of Labor Statistics (BLS). The Escalation Table is populated using the Producer Price Indexes (PPI) values for the current month (the month in which the risk is calculated) and base month (the month of the contract award). The quotient of these two values is used to find the escalation factor, $\text{Esc}_{PPI}$:

$$\text{Esc}_{PPI} = \frac{\text{PPI value for current month}}{\text{PPI value for base month}}$$

**Equation 6: Escalation Factor**

**Adjusted Price**: Also called the "Escalated Price" is the price paid is multiplied by the escalation factor to calculate the adjusted or escalated price:

$$P = \text{Price} \times \text{Esc}_{PPI}$$

**Equation 7: Adjusted Price**

**Outliers**: The Price Engine employs a two-pass procedure to remove outliers from the population, which could skew the Average Price calculation. The process begins by assessing:

- If N ≤ 2, the Price Engine includes all adjusted prices regardless of magnitude
- If N > 2, the Price Engine employs the tiered, two-pass procedure to remove outliers from the population

**Pass 1**: This pass is performed using all adjusted prices (of N).

a. Determine the median ($M_1$) of the population of adjusted prices.

NOTE: when the population is sorted in order of magnitude, the median is the middle value (if N is odd) or the average of the two middle values (if N is even).

b. Exclude all prices which are greater than four times the median ($4M_1$).

c. $n$ = the number of remaining prices.

**Determination of Pass 2**: To determine if Pass 2 is required, calculate the mean ($\mu$), standard deviation ($\sigma$) and coefficient of variation ($CV$) for the population of remaining prices:

$$\mu = \frac{1}{n} \sum_{i-1}^{n} P_i$$

**Equation 8: Population Mean ($\mu$)**

$$\sigma = \sqrt{\frac{\sum (P - \mu)^2}{n}}$$

**Equation 9: Population Standard Deviation ($\sigma$)**

$$CV = \frac{\sigma}{\mu}$$

**Equation 10: Coefficient of Variation (*CV*)**


**Pass 2**: This pass is performed on the remaining prices only if *CV* > 0.2

    a. Find the median ($M_2$) of the remaining prices.

    b. Given the values of $M_2$ and *CV* determine how many remaining prices lie outside the exclusions limits from the median, shown in the table below.

| Pass 2 Exclusion Limits | | |
|---|---|---|
| **If the Median is:** | ***And* the Coefficient of Variation is:** | **The exclusion limits are:** |
| $M_2 \le$ \$2.00 | *CV* > 0.4 | $M_2 \pm 0.8\ M_2$ |
| | 0.2 < *CV* ≤ 0.4 | $M_2 \pm 0.6\ M_2$ |
| \$2.00 < $M_2 \le$ \$7.00 | *CV* > 0.4 | $M_2 \pm 0.7\ M_2$ |
| | 0.2 < *CV* ≤ 0.4 | $M_2 \pm 0.5\ M_2$ |
| \$7.00 < $M_2 \le$ \$100.00 | *CV* > 0.4 | $M_2 \pm 0.6\ M_2$ |
| | 0.2 < *CV* ≤ 0.4 | $M_2 \pm 0.4\ M_2$ |
| \$100.00 < $M_2 \le$ \$1,000.00 | *CV* > 0.4 | $M_2 \pm 0.5\ M_2$ |
| | 0.2 < *CV* ≤ 0.4 | $M_2 \pm 0.3\ M_2$ |
| $M_2 >$ \$1,000.00 | *CV* > 0.2 | $M_2 \pm 0.4\ M_2$ |

**Table 19: Price Risk Pass 2 Exclusion Limits**

    c. If the number of remaining prices outside the exclusion limits is less than 0.32*n*, exclude those prices. Otherwise, the prices are included.


**Examples**:
- Example 1: For a given population of 24 prices, *n* = 24, $M_2$ = \$1.39 and *CV* = 0.592. The exclusion limits would be \$1.39 ± (0.8×\$1.39). Therefore, prices greater than \$2.50 and less than \$0.28 are outside the exclusion limits. If 7 prices are outside the exclusion limits, these prices will be excluded (since 7 < .32 × 24).

- Example 2: For a given population of 79 prices, *n* = 11, $M_2$ = \$6.42 and *CV* = 0.312. The exclusion limits would be \$6.42 ± (0.5×\$6.42). Therefore, prices greater than \$9.63 and less than \$3.21 are outside the exclusion limits. If 28 prices are outside the exclusion limits, these prices would not be excluded in Pass 2 (since 28 > .32 × 11).

- Example 3: For a given population of 14 prices, *n* = 14, $M_2$ = \$859.81 and *CV* = 0.193. Since *CV* ≤ 0.2, Pass 2 is not performed.

**Expected Range**: After all exclusions are performed, the Price Engine calculates $\mu$, $\sigma$ and *CV* for the remaining prices and Expected Range, Upper Control Limit (UCL), and Lower Control Limit (LCL):

    a. Expected Range: The expected range for the item is $\mu \pm 2\sigma$. Bids within plus or minus two standard deviations are rated WITHIN RANGE.

    b. Upper Control Limit: UCL = $\mu + 2\sigma$. Bids higher than this value are rated HIGH.

    c. Lower Control Limit: LCL = $\mu - 2\sigma$. Bids lower than these values are rated LOW.
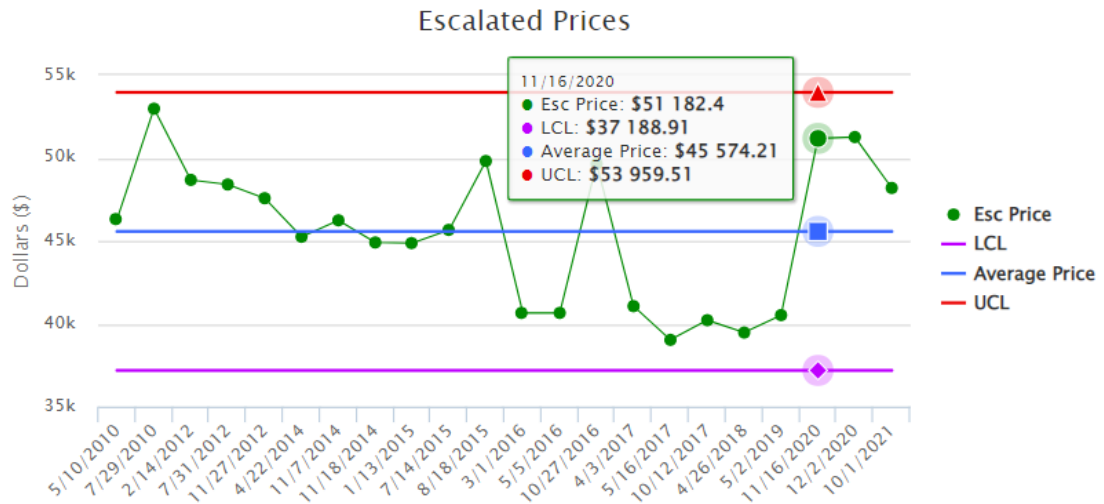


**Figure 4: Price Risk Graph**

## 6.2  PRICE CONFIDENCE SCORE

**6.2.1  Average Price Confidence Score**: The Average Price Confidence Score is based on the count and statistical distribution of final remaining prices. The Confidence Score is rated High, Medium, and Low with corresponding colors of Red, Yellow, and Green. If there are:

| Total Remaining Prices (TRP) | Confidence Score | Highlight Color |
|---|---|---|
| > 72 | High | Green |
| < 3 | Low | Red |
| 3 ≤ TRP ≤ 72   and   $CV < 0.15$ | High | Green |
| 3 ≤ TRP ≤ 72   and   $CV ≥ 0.15$ | Medium | Yellow |

**Table 20: Average Price Confidence**

- $CV < 0.15$ (prices are closer to the Average Price)
- $CV ≥ 0.15$ (prices are farther from the Average Price)

## 7.  ITEM RISK

### 7.1  ITEM/PRICE RISK REPORT

The purpose of the Item/Price Risk Report is to identify if an item is High Risk. In addition to a designation of High Risk or Not High Risk, this report includes past purchase history, price escalation calculations, and includes a graph that displays historical prices depicting the upper and lower bounds (control limits) of the expected range. Item Risk information might be used by the acquisition community to determine if mitigation strategies are required based on agency policies. Item Risk is determined based on information gathered from multiple sources to include but not limited to:

**7.1.1**  **Federal Logistics Information System (FLIS)**: FLIS provides unrestricted information for each NSN in the Federal Catalog System (FCS). FLIS provides information on part Characteristics, National Motor Freight Classification (NMFC), Precious Metals Indicator Code (PMIC), Demilitarization Code, and Criticality Code.

**7.1.2**  **Diminishing Manufacturing Sources and Material Shortages (DMSMS)**: DMSMS is the loss, or impending loss, of manufacturers or suppliers of items, raw materials, or software and/or obsolescence. The DoD loses a manufacturer or supplier when that manufacturer or supplier discontinues production and/or support of needed items, raw materials, or software or when the supply of raw material is no longer available.

**7.1.3**  **Electrical and Electronic Equipment Components (Federal Supply Group 59)**: DLA has declared items in this category to be High Risk due to increased risk of counterfeiting.

**7.1.4**  **Dynamic Item Risk**: SPRS implements predictive analytics to help identify items with a higher chance to be suspected counterfeit.

## APPENDIX A – GLOSSARY OF TERMS

This section provides definitions for acronyms, abbreviations and terms used in the SPRS Evaluation Criteria Manual.

| ACRONYM/ ABBREVIATION | DEFINITION |
|---|---|
| AWM | Age-Weight Multiplier |
| BLS | Bureau of Labor Statistics |
| CAGE | Commercial and Government Entity |
| CAP | Corrective Action Plan |
| CAR | Corrective Action Request |
| CLIN | Contract Line Item Number |
| CPARS | Contractor Performance Assessment Reporting System |
| DCMA | Defense Contract Management Agency |
| DFARS | Defense Federal Acquisition Regulation Supplement |
| DLA | Defense Logistics Agency |
| DMSMS | Diminishing Manufacturing Sources and Material Shortages |
| DoD | Department of Defense |
| EDA | Electronic Data Access |
| FAPIIS | Federal Awardee Performance and Integrity Information System |
| FAR | Federal Acquisition Regulation |
| FCS | Federal Catalog System |
| FLIS | Federal Logistics Information System |
| FPDS | Federal Procurement Data System |
| FSC | Federal Supply Classification |
| GIDEP | Government-Industry Data Exchange Program |
| GS1 | Global Standards 1 |
| IBSN | Internet Blog Serial Number |
| LCL | Lower Control Limit |
| MIR | Material Inspection Records |
| MOCAS | Mechanization of Contract Administration Services |
| NAICS | North American Classification System |
| NMFC | National Motor Freight Classification |
| NSN | National Stock Numbers |
| PAR | Program Assessment Report |
| PDREP | Product Data Reporting and Evaluation Program |
| PIID | Contract Procurement Instrument Identifier |
| PMIC | Precious Metals Indicator Code |

| ACRONYM/ ABBREVIATION | DEFINITION |
|---|---|
| PPI | Producer Price Index |
| PPIRS-RC | Past Performance Information Retrieval System - Report Cards |
| PQDR | Product Quality Deficiency Report |
| PSC | Product Service Code |
| SAM | System for Award Management |
| SDR | Supply Discrepancy Report |
| SLIN | Subcontract Line Item Number |
| SPRS | Supplier Performance Risk System |
| SRS | Supplier Risk System |
| TRP | Total Remaining Prices |
| UCL | Upper Control Limit |
| UPC | Universal Product Code |
| WAWF | Wide Area Workflow |

## APPENDIX B – GLOSSARY OF SYMBOLS

This section provides definitions for symbols & mathematical operators used in the SPRS Evaluation Criteria Manual.

| SYMBOL | DEFINITION |
|:---:|:---|
| # | Number Sign, Pound Sign, Hashtag: Indicates number |
| $\sum$ | Summation: The addition of a sequence of any kind of numbers. |
| $\mu$ | Greek letter (pronounced mu): Arithmetic Mean: Sum of all of the numbers divided by the number of numbers. |
| $\sigma$ | Greek letter (Sigma): Standard Deviation: A measure of the amount of variation or dispersion of a set of values. |
| CV | Coefficient of Variation: the ratio of the standard deviation to the mean. The higher the coefficient of variation, the greater the level of dispersion around the mean. |
| $\sqrt{\phantom{x}}$ | Square Root: The square root of a number is the factor that we can multiply by itself to get that number. |
| $\pm$ | Plus-Minus Sign:<br>1. Indicates a choice of exactly two possible values, one of which is obtained through addition and the other through subtraction<br>2. Indicates the confidence interval or uncertainty bounding a range of possible errors in a measurement. |
| $\leq$ | Less Than or Equal to |
| $\geq$ | Greater Than or Equal to |
| < | Less Than |
| > | Greater Than |

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