Understanding the Software Resource Data Report (SRDR) Requirements
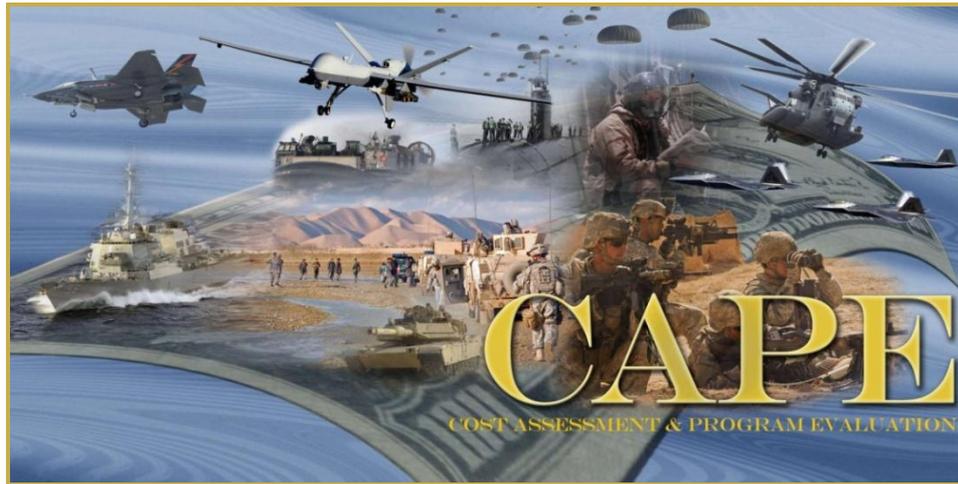

June 5, 2012

Outline

1. The role of SRDRs

2. SRDR Planning

3. SRDR Data Elements

4. SRDR Dictionary

The Need for Software Data

- Software development cost is a significant part of today's weapon system development cost

- Government analysts use actuals from other completed software development projects as a basis for their software cost estimates

- The data are used in different ways to underpin a software cost estimate. For example:
  - As a basis for sizing estimates
  - Application of a direct analogy
  - Calibration of commercial software cost models
  - Development of custom gov't models through statistical analysis

What is the SRDR?

- The Software Resource Data Report (SRDR) is a contract data deliverable that formalizes the reporting of software metric data. It consists of:
  - Data Report
  - Data Dictionary
- It is designed to record both the ***expectations*** and ***actual results*** of new software developments or upgrades

Authority

- The SRDR is a contract reporting requirement identified in Enclosure 4, DoDI 5000.02, Table 4. It applies to:

  "All major <u>contracts</u> and <u>subcontracts</u>, regardless of contract type, for contractors developing/producing software elements within ACAT I and IA programs and <u>pre-MDAP</u> and <u>pre-MAIS</u> programs subsequent to Milestone A approval for any software development element with a projected software effort greater than $20M (then-year dollars)."

- Guidance for SRDR implementation is provided in DoD 5000.04-M-1

SRDR Planning

- The SRDR planning process, conducted by the CWIPT, establishes who must submit SRDRs, what elements must be reported, and when the SRDRs shall be submitted

- This planning information is captured on separate contract CSDR plans (DD Form 2794) for each reporting contractor

- The resource distribution table (RDT) is used to facilitate identification of major software development efforts

SRDR Planning

1. Who must report

2. What elements to report

3. When to report

Who Must Submit SRDRs?

- Reporting requirement is established on a contract basis, not by individual software element

- All contractors (primes and subs) deliver their SRDR data directly to the government.

- Prime contractors are required to flow down SRDR requirements to all affected subcontractors
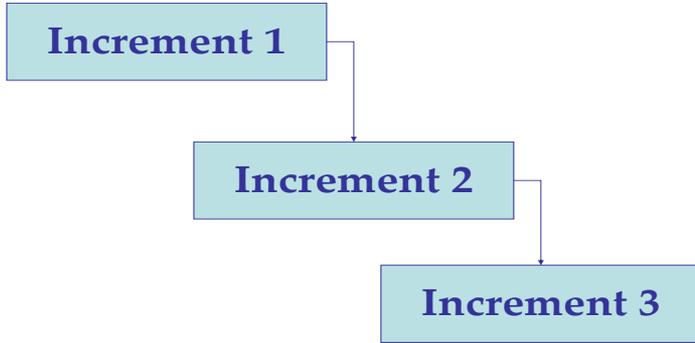
Contractor	SW Value	Who Reports?
Prime (+ Sub Ctr)	<$20M	No report required**
	>$20M	Prime
Sub Ctr Only	<$20M	Data is reflected in the prime's SRDR report (if the prime is required to report SRDRs)
	>$20M	Sub Ctr (Direct report to the Gov't)

**Exception: "*The SRDR requirement on high-risk or high-technical-interest contracts priced below $20 million is left to the discretion of the DoD PM with approval by the Chair, CAIG*" – Encl 4, DoDI 5000.02, Table 4
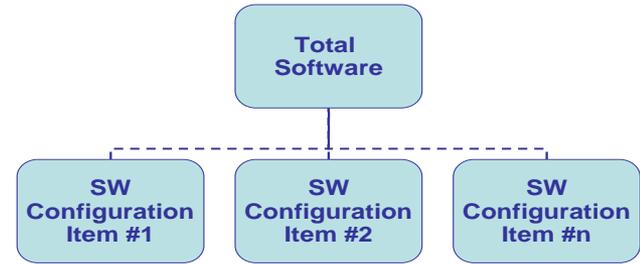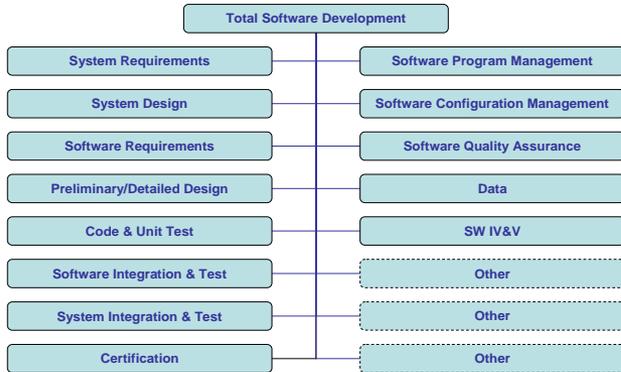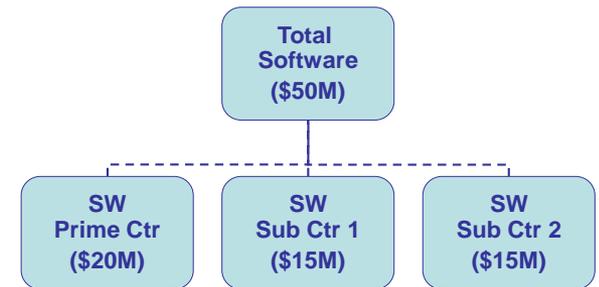
What Constitutes SW Development?

Increment 1

Increment 2

Increment 3

Consider All Increments

Total Software

SW Configuration Item #1

SW Configuration Item #2

SW Configuration Item #n

Consider All Components

The Government Uses a Comprehensive Definition

Total Software Development

System Requirements	Software Program Management
System Design	Software Configuration Management
Software Requirements	Software Quality Assurance
Preliminary/Detailed Design	Data
Code & Unit Test	SW IV&V
Software Integration & Test	Other
System Integration & Test	Other
Certification	Other

Consider All Activities

Total Software ($50M)

SW Prime Ctr ($20M)

SW Sub Ctr 1 ($15M)

SW Sub Ctr 2 ($15M)

Consider All Contracts

SRDR Planning

OSD CAPE

1. Who must report

2. What elements to report

3. When to report

Identify WBS Elements to Report

- What elements within the system contain software?

- Software exists throughout the system
  - Embedded software within prime mission equipment
  - Applications running on general purpose computers
  - Mission simulator software within training equipment
  - Support software such as mission planning
  - Specialized test software

- For every appropriate element identified, it must be reported in the SRDR

Identify Reporting Elements

OSD CAPE

COST AND SOFTWARE DATA REPORTING PLAN

Form Approved
OMB No. 0704-0188

The public reporting burden for this collection of information is estimated to average 8 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to Department of Defense, Executive Services Directorate (0704-0188). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.
PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE ABOVE ORGANIZATION.

1. MAJOR PROGRAM	a. NAME: UAV Program

b. PHASE/MILESTONE — Pre-A | A | B [X] | C-FRP | C-LRIP | O&S

c. PRIME MISSION PRODUCT: THE UAV

2. WBS SYSTEM TYPE: Unmanned Air Vehicle System

3. SUBMISSION TYPE: INITIAL [X] | CHANGE

4. CURRENT SUBMISSION DATE (YYYYMMDD): 20120512

5. LAST APPROVED PLAN DATE (YYYYMMDD):

6a. POINT OF CONTACT (POC) NAME AND ADDRESS (Include ZIP Code):
UAV Program Office
1 UAV Drive
Los Angeles, CA 90006

6b. TELEPHONE NUMBER (Include Area Code): 1234567890

6c. FAX NUMBER (Include Area Code):

6d. E-MAIL ADDRESS: uavprogramoffice@uav.com

7. PLAN TYPE: PROGRAM | CONTRACT (PRIME [X] | CONTRACT (SUB)

8. PREPARING ORGANIZATION: UAV Program Office

9a. CONTRACTOR NAME/ADDRESS
i. PERFORMING ORGANIZATION: TBD   ii. DIVISION

9b. CONTRACT NUMBER: UAV123-12-Z-1000

9c. APPROPRIATION: RDT&E [X] | PROCUREMENT | O&M

10. APPROVED PLAN NUMBER:

13. REPORTS REQUIRED (X if applicable) — DD 1921-3 (CBDR): [X]

11. WBS ELEMENT CODE		12. WBS REPORTING ELEMENTS	13. REPORTS REQUIRED					
a. PROGRAM/ CONTRACT/ SUBCONTRACT	b. CONTRACT/ SUBCONTRACT		a. CWBS DICTIONARY	b. DD 1921 (CDSR)	c. DD 1921-1 (FCHR)	d. DD 1921-2 (PCR)	e. DD 1921-4 (CSR)	f. SRDR FORMATS
1.0	1.0	UAV System	X	X	X			X
1.1	1.1	Air Vehicle	X	X	X			X
1.1.1	1.1.1	Airframe	X	X				
1.1.1.1	1.1.1.1	Airframe Integration, Assembly, Test and Checkout	X	X				
1.1.1.2	1.1.1.2	Fuselage	X	X				
1.1.1.3	1.1.1.3	Wing	X	X				
1.1.1.4	1.1.1.4	Empennage	X	X				
1.1.1.5	1.1.1.5	Nacelle	X	X				
1.1.1.6	1.1.1.6	Other Airframe Components	X	X				
1.1.2	1.1.2	Propulsion	X	X				
1.1.3	1.1.3	Vehicle Subsystems	X	X				
1.1.3.1	1.1.3.1	Vehicle Subsystem Integration, Assembly, Test, and Checkout	X	X				
1.1.3.2	1.1.3.2	Flight Control Subsystem	X	X				
1.1.3.3	1.1.3.3	Auxiliary Power Subsystem	X	X				
1.1.3.4	1.1.3.4	Hydraulic Subsystem	X	X				
1.1.3.5	1.1.3.5	Electrical Subsystem	X	X				
1.1.3.6	1.1.3.6	Environmental Control Subsystem	X	X				
1.1.3.7	1.1.3.7	Fuel Subsystem	X	X				
1.1.3.8	1.1.3.8	Landing Gear	X	X				
1.1.3.9	1.1.3.9	Rotor Group	X	X				
1.1.3.10	1.1.3.10	Drive System	X	X				
1.1.3.11	1.1.3.11	Vehicle Subsystem Software Release	X	X				X
1.1.3.12	1.1.3.12	Other Subsystems	X	X				
1.1.4	1.1.4	Avionics	X	X				
1.1.4.1	1.1.4.1	Avionics Integration, Assembly, Test, and Checkout	X	X				
1.1.4.2	1.1.4.2	Communication/Identification	X	X				
1.1.4.3	1.1.4.3	Navigation/Guidance	X	X				X
1.1.4.4	1.1.4.4	Automatic Flight Control	X	X				
1.1.4.5	1.1.4.5	Health Monitoring System	X	X				
1.1.4.6	1.1.4.6	Stores Management	X	X				
1.1.4.7	1.1.4.7	Mission Computer/Processing	X	X				X
1.1.4.8	1.1.4.8	Fire Control	X	X				
1.1.4.9	1.1.4.9	Avionics Software Release	X	X				X

DD FORM 2794, MAY 2011   PREVIOUS EDITION IS OBSOLETE

SRDR reporting requirements are specified in Box 13f of Cost and Software Data Reporting Plan (DD 2794).

Initial SW Reporting Reqt's are identified by the CWIPT on the Program Plan and elaborated on the Contract Plan.

Rule of Thumb: If there is software effort (hours or SLOC) put an 'X' in the SRDR block

Identify Reporting Elements

OSD CAPE

COST AND SOFTWARE DATA REPORTING PLAN

Form Approved OMB No. 0704-0188

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b. PHASE/MILESTONE
Pre-A | X B
A | C-LRIP
C-FRP
O&S

c. PRIME MISSION PRODUCT
THE UAV

2. WBS SYSTEM TYPE
Unmanned Air Vehicle System

3. SUBMISSION TYPE
X INITIAL
CHANGE

4. CURRENT SUBMISSION DATE (YYYYMMDD)
20120512

5. LAST APPROVED PLAN DATE (YYYYMMDD)

6a. POINT OF CONTACT (POC) NAME AND ADDRESS (Include ZIP Code)
UAV Program Office
1 UAV Drive
Los Angeles, CA 90006

6b. TELEPHONE NUMBER (Include Area Code)
1234567890

6c. FAX NUMBER (Include Area Code)

6d. E-MAIL ADDRESS
uavprogramoffice@uav.com

7. PLAN TYPE
PROGRAM | X CONTRACT (PRIME)
CONTRACT (SUB)

8. PREPARING ORGANIZATION
UAV Program Office

9a. CONTRACTOR NAME/ADDRESS
i. PERFORMING ORGANIZATION   ii. DIVISION
TBD

9b. CONTRACT NUMBER
UAV123-12-Z-1000

9c. APPROPRIATION
X RDT&E
PROCUREMENT
O&M

10. APPROVED PLAN NUMBER

11. WBS ELEMENT CODE

12. REPORTS REQUIRED

DD 1921-3 (CBDR): X

a. PROGRAM/ CONTRACT/ SUBCONTRACT	b. CONTRACT/ SUBCONTRACT	WBS	DD 1921 (CSR)	c. DD 1921-1 (FCHR)	d. DD 1921-2 (PCR)	e. DD 1921-4 (CSR)	f. SRDR FORMATS
1.0	1.0	UAV System	X	X			X
1.1	1.1	Air Vehicle	X	X			X
1.1.1	1.1.1	Airframe	X				
1.1.1.1	1.1.1.1	Airframe Integration, Assembly, Test	X				
1.1.1.2	1.1.1.2	Fuselage	X				
1.1.1.3	1.1.1.3	Wing	X				
1.1.1.4	1.1.1.4	Empennage	X				
1.1.1.5	1.1.1.5	Nacelle	X				
1.1.1.6	1.1.1.6	Other Airframe Components	X	X			
1.1.2	1.1.2	Propulsion	X	X			
1.1.3	1.1.3	Vehicle Subsystems	X	X			
1.1.3.1	1.1.3.1	Vehicle Subsystem Integration, Assembly, Test, and Checkout	X	X			
1.1.3.2	1.1.3.2	Flight Control Subsystem	X	X			
1.1.3.3	1.1.3.3	Auxiliary Power Subsystem	X	X			
1.1.3.4	1.1.3.4	Hydraulic Subsystem	X	X			
1.1.3.5	1.1.3.5	Electrical Subsystem	X	X			
1.1.3.6	1.1.3.6	Environmental Control Subsystem	X	X			
1.1.3.7	1.1.3.7	Fuel Subsystem	X	X			
1.1.3.8	1.1.3.8	Landing Gear	X	X			
1.1.3.9	1.1.3.9	Rotor Group	X	X			
1.1.3.10	1.1.3.10	Drive System	X	X			
1.1.3.11	1.1.3.11	Vehicle Subsystem Software Release	X	X			X
1.1.3.12	1.1.3.12	Other Subsystems	X	X			
1.1.4	1.1.4	Avionics	X	X			
1.1.4.1	1.1.4.1	Avionics Integration, Assembly, Test, and Checkout	X	X			
1.1.4.2	1.1.4.2	Communication/Identification	X	X			
1.1.4.3	1.1.4.3	Navigation/Guidance	X	X			X
1.1.4.4	1.1.4.4	Automatic Flight Control	X	X			
1.1.4.5	1.1.4.5	Health Monitoring System	X	X			
1.1.4.6	1.1.4.6	Stores Management	X	X			
1.1.4.7	1.1.4.7	Mission Computer/Processing	X	X			X
1.1.4.8	1.1.4.8	Fire Control	X	X			
1.1.4.9	1.1.4.9	Avionics Software Release	X	X			X

WBS element 1.0 is a mandatory element that must also be identified

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Identify Reporting Elements

- Identify all elements requiring software development (even if the development is performed by a subcontractor)

- Include all elements that contain software effort, even if little development will occur on that element. This ensures the SRDR will adhere to DID requirements for reporting total delivered software size.

- Don't omit reporting because a software element fails to exceed $20M. The overall SRDR requirement is established at the contract level.

SRDR Planning

1. Who must report

2. What elements to report

3. When to report

Identify When to Report (1 of 2)

- Reporting events are specified in Box 14 of the *Contract Plan* (DD Form 2794)

- There are two types of reporting events
  - Contract Event: SRDR is required at contract start (Initial Developer Report) and at contract completion (Final Developer Report)
  - Product Event: SRDR is required at start of a product 'increment' (Initial Developer Report) and at completion of product 'increment' (Final Developer Report)

- Do not include the Initial Government Report on the contract plan. It is prepared by the program office and is identified on the program plan.
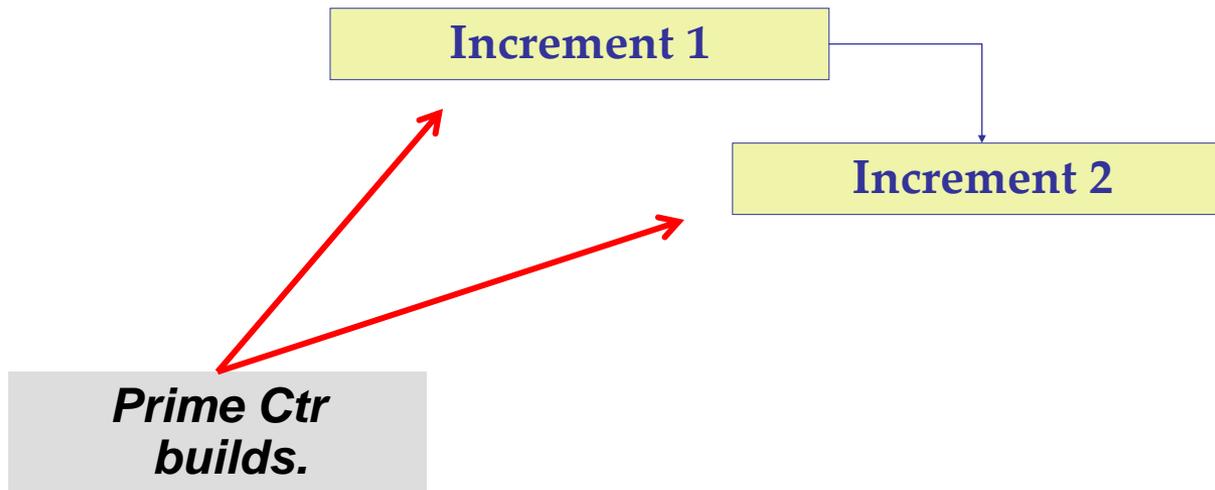
Identify When to Report (2 of 2)

- What is the definition of an 'increment'?
  - A partial **_delivery_** of a product capability. Also referred to as spiral, increment, build, release, etc
  - The Government is not seeking SRDRs on the contractor's internal engineering builds which generally consist of many builds

- Subcontractor increments may be defined as a partial **_delivery_** of product to the prime contractor (possibly on a build schedule different than the prime's build schedule)

These definitions should be clearly defined and agreed upon by the CWIPT

What is an Increment?

Increment 1

Increment 2

Prime Ctr builds.

What is an Increment?

Sub Ctr builds

Increment 1

Increment 2

Increment 3

Increment 4

Sub Ctr SRDR reporting schedule may be different than the prime's build schedule.

Sub Ctr drop to Prime Ctr

Increment 1

Increment 2

Prime Ctr builds

Identify When to Report

Contract Award

Initial Developer Report due for entire SW product

+60 days

Contract Complete

Final Developer Report due for entire SW product

+60 days

Build 1 Start

Initial Developer Report due for Build 1

Build 1 End

Final Developer Report due for Build 1

+60 days

+60 days

Build 2 Start

Initial Developer Report due for Build 2

Build 2 End

Final Developer Report due for Build 2

+60 days

+60 days

The Initial Developer Report is always paired with a Final Developer Report

Build 3 Start

Initial Developer Report due for Build 3

Build 3 End

Final Developer Report due for Build 3

+60 days

+60 days

Identify When to Report

14. CSDR SUBMISSION DATES

a. SUBMISSION	b. FORM(S)	c. EVENT	d. AS OF DATE (YYYYMMDD)	e. DUE DATE (YYYYMMDD)
1	CWBS Dictionary	CWBS Dictionary	20120601	20120801
2	1921, 1921-1	Initial Report	20120601	20120801
3	1921, 1921-1	Interim Report	20131001	20131201
4	1921, 1921-1	Final Report	20140601	20140801
5	SRDR Initial	Initial Report - Total Contract	20120601	20120801
6	SRDR Initial	Initial Report - Build 1	20120601	20120801
7	SRDR Final	Final Report - Build 1	20130101	20130303
8	SRDR Initial	Initial Report - Build 2	20121101	20130101
9	SRDR Final	Final Report - Build 2	20131001	20131201
10	SRDR Initial	Initial Report - Build 3	20130401	20130601
11	SRDR Final	Final Report - Build 3	20140501	20140701
12	SRDR Final	Final Report - Total Contract	20140601	20140801

The Initial Developer Report is always paired with a Final Developer Report

- *Report an Initial Developer Report and a Final Developer Report for the entire contract.*

- *Report an Initial Developer Report and a Final Developer Report for each individual software increment/release/build.*

- *Contracts with only one increment/release/build need only to report an Initial Developer Report and a Final Developer Report once for the entire contract.*
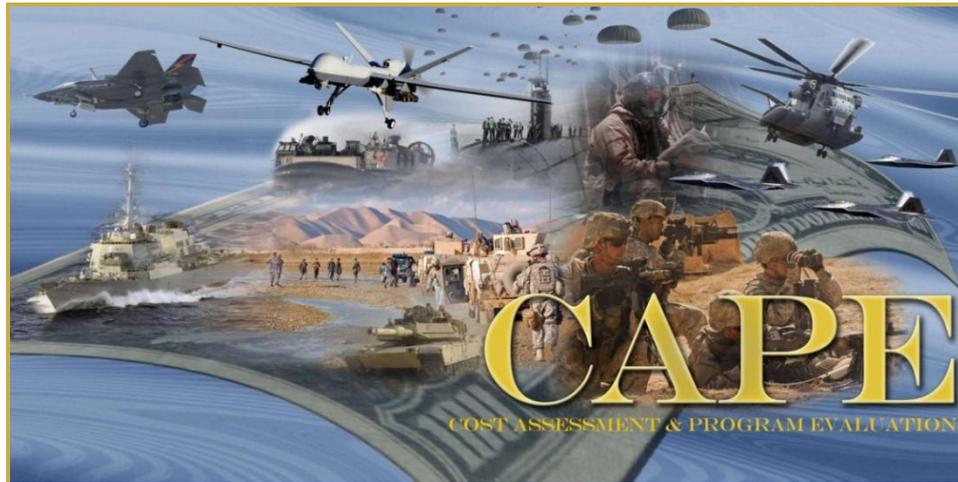
Scope of Data Reported*

- If reporting event is <u>contract start</u> or <u>contract end</u> then the scope of the SRDR data must reflect the entire development effort

- If the reporting event is <u>increment start</u> or <u>increment end</u> then the scope of the SRDR data must reflect that specific increment only

*DI-MGMT-81739B and DI-MGMT-81740A Section 3

Overview of SRDR Data Elements

Reporting Details

- Data reporting instructions for SRDR submissions are specified in Data Item Description (DID)

    - SRDR: Initial Developer Report – Captures estimates of the software development - *DI-MGMT-81739B*

    - SRDR: Final Developer Report – Captures actuals of the software development - *DI-MGMT-81740A*

Important Tailoring Features

- Both the data and the report format of the SRDR can be tailored
- The SRDR DID broadly describes the data field requirements
  - Allows contractors to report data that is already collected as part of the company's metrics and accounting practices
  - The data conforms to the company's internal definitions

Context and Development Organization
(1/3)

This section contains SRDR metadata which gives context to the SW data being reported

- Major Program* (3.1.2)
  - Name
  - Phase/Milestone

- Reporting Organization Type* (3.1.3)
  - Prime/Associate Contractor
  - Direct-Reporting Subcontractor
  - Government

- Name/Address* (3.1.4)
  - Reporting Organization
  - Division

- Approved Plan Number* (3.1.5)

* Could be common to every WBS element reported in the SRDR

Numbers in parentheses indicate applicable DID section
(DI-MGMT-81739B and DI-MGMT-81740A)

Context and Development Organization
(2/3)

- Customer (Direct-Reporting Subcontractor Use Only)* (3.1.6)
- Contract Type* (3.1.7)
- WBS Element Code/WBS Reporting Element (3.1.8)
- Type Action* (3.1.9)
    - Contract Number
    - Latest Modification
    - Solicitation Number
    - Task Order/Delivery Order/Lot Number
- Period of Performance* (3.1.10)
- Appropriation* (3.1.11)
- Submission Number* (3.1.12)
- Resubmission Number* (3.1.13)

* Could be common to every WBS element reported in the SRDR

Numbers in parentheses indicate applicable DID section
(DI-MGMT-81739B and DI-MGMT-81740A)

Context and Development Organization
(3/3)

- Report As Of Date* (3.1.14)
- Point of Contact* (3.1.15)
- Development Organization (3.1.16)
- Software Process Maturity (3.1.17)
- Precedents (3.1.18)
- SRDR Data Dictionary Filename* (3.1.19)
- Comments (3.1.20)

* Could be common to every WBS element reported in the SRDR

Numbers in parentheses indicate applicable DID section
(DI-MGMT-81739B and DI-MGMT-81740A)

Product and Development Description

This section provides information about the software product and descriptive detail about the software development effort

- Functional Description (3.2.1)
- Software Development Characterization (3.2.2)
- Application Type (3.2.3)
  - Primary and Secondary Programming language (3.2.3.1)
  - Percentage of Overall Product Size (3.2.3.2)
  - Development Process (3.2.3.3)
  - SW Development Method (3.2.3.4)
  - Upgrade or New Development? (3.2.3.5)
  - Software Reuse (3.2.3.6)
- COTS/GOTS Applications Used (3.2.4)
  - Name (3.2.4.1)
  - Integration Effort (Optional) (3.2.4.2)
- Staffing (3.2.5)
  - Peak Staff (3.2.5.1)
  - Peak Staff Date (3.2.5.2)
  - Hours per Staff-Month* (3.2.5.3)
- Personnel Experience by Domain (3.2.6)
- Comments (3.2.7)

* Could be common to every WBS element reported in the SRDR

Numbers in parentheses indicate applicable DID section
(DI-MGMT-81739B and DI-MGMT-81740A)

Product Size

Provides information on code size
- Requirements Counts
  - Total Software Requirements (3.3.1.1)
  - New Software Requirements (3.3.1.2)
  - Total External Interface Requirements (3.3.2.1)
  - New External Interface Requirements (3.3.2.2)
  - Requirements Volatility (3.3.3)

- Total Delivered Code Count (3.3.4)
  - New Code* (3.3.4.1)
  - Reused Code With Modification* (3.3.4.1.1)
  - Reused Code Without Modification* (3.3.4.1.2)
  - Carryover Code** (3.3.4.1.3)
  - Deleted Code** (3.3.4.1.4)
  - Auto-generated Code** (3.3.4.1.5)
  - Subcontractor-Developed Code ** (3.3.4.1.6)
  - Counting Convention (3.3.4.2)

- Comments (3.3.5)

* Can be tailored
** Mandatory

Numbers in parentheses indicate applicable DID section
(DI-MGMT-81739B and DI-MGMT-81740A)

Code Size Example

		Build 1 Complete	Build 2 Complete	Build 3 Complete	Contract Complete
New Code	Human Generated	1,000	0	2,500	3,500
	Auto Generated	0	500	2,500	3,000
External Reused	With Modification	5,000	15,000	500	20,500
	Without Modification	3,000	0	2,000	5,000
Carryover Code from Previous Build	With Modification	0	0	12,250	N/A
	Without Modification	0	9,000	12,250	N/A
Total Delivered Code		9,000	24,500	32,000	32,000

Tailoring Restrictions*

- Contractors must ensure that their code partitions
  - Do not double count
  - When summed, reflect total delivered size
- Equivalent New Source Lines of Code (ESLOC) and Delivered Source Lines of Code (DSLOC) are not permitted as primary sizing metrics
- Alternative sizing metrics (such as Function Points) are permitted, but must be used as a consistent measure between the Initial Developer Report and the Final Developer Report

* DI-MGMT-81739B and DI-MGMT-81740A Sections 3.3.4.1 and 3.3.4.2

Resource and Schedule

Provides information on the amount of effort expended and the schedule length of development

- Effort must be reported in staff-hours (3.4.1)
- Effort must be partitioned into a set of activities (3.4.1)
    - (Example) Software Requirements Analysis
    - (Example) Software Architecture and Detailed Design
    - (Example) Software Coding and Unit Testing
    - (Example) Software Integration
    - (Example) Software Qualification Testing
    - (Example) System/Software Integration
    - (Example) System/Software Qualification Testing
    - (Example) Software Quality Assurance
    - (Example) Software Configuration Management
    - (Example) Software Program Management
    - Other software support activities (Examples: data, process improvement, IV&V, problem resolution)
- For <u>each</u> SW activity reported the contractor must provide:
    - CSDR WBS Element reference (3.4.2)
    - Start Month (3.4.4)
    - End Month (3.4.4)
    - Total Hours Prime Contractor Only (3.4.1)
    - Total Hours All Other Subcontractors (3.4.3)
- Note: It is possible that certain SW product elements do not contain a complete set of software development activities

Numbers in parentheses indicate applicable DID section
(DI-MGMT-81739B and DI-MGMT-81740A)

Mapping SW Activities to WBS

- The DID requires contractors to show where their software development activities map to in the CSDR WBS

- Suppose

  – Contractor is preparing an SRDR for a product element called "Computer Software Configuration Item (CSCI) #1"

Mapping SW Activities to the WBS

CSCI #1
-Preliminary Design
-Detailed Design
-Coding
-Unit Test
-SW Acceptance Test
-HWSW Integration Test

1.0	Electronic System
1.1	Prime Mission Product (PMP)
1.1.1	PMP Subsystem
1.1.2	PMP Software Release
1.1.2.1	Software Product Engineering
1.1.2.2	Computer Software Configuration Item (CSCI) #1
1.1.2.3	Computer Software Configuration Item (CSCI) #2
1.1.2.4	Software Integration, Assembly, Test and Checkout
1.1.3	PMP Integration, Assembly, Test and Checkout
1.2	Platform Integration, Assembly, Test and Checkout
1.3	System Engineering
1.4	Program Management
1.5	System Test and Evaluation
1.6	Training
1.7	Data
1.8	Peculiar Support Equipment
1.9	Common Support Equipment
1.10	Operational/Site Activation
1.11	Industrial Facilities
1.12	Initial Spares and Repair Parts

On the SRDR, each software development activity
reported for CSCI #1 maps to WBS element 1.1.2.2

Mapping Example

Software Product Engineering
    Preliminary Design
    Detailed Design
    Coding
    Unit Test
    SW Acceptance Test
    HW/SW Integration & Test

WBS 1.1.2.1 (separate SRDR)

CSCI #1
    Preliminary Design
    Detailed Design
    Coding
    Unit Test
    SW Acceptance Test
    HW/SW Integration & Test

WBS 1.1.2.2 (separate SRDR)

CSCI #2
    Preliminary Design
    Detailed Design
    Coding
    Unit Test
    SW Acceptance Test
    HW/SW Integration & Test

WBS 1.1.2.3 (separate SRDR)

SW IAT&C
    Preliminary Design
    Detailed Design
    Coding
    Unit Test
    SW Acceptance Test
    HW/SW Integration & Test

WBS 1.1.2.4 (separate SRDR)

1.0	Electronic System
1.1	Prime Mission Product (PMP)
1.1.1	PMP Subsystem
1.1.2	PMP Software Release
1.1.2.1	Software Product Engineering
1.1.2.2	Computer Software Configuration Item (CSCI) #1
1.1.2.3	Computer Software Configuration Item (CSCI) #2
1.1.2.4	Software Integration, Assembly, Test and Checkout
1.1.3	PMP Integration, Assembly, Test and Checkout
1.2	Platform Integration, Assembly, Test and Checkout
1.3	System Engineering
1.4	Program Management
1.5	System Test and Evaluation
1.6	Training
1.7	Data
1.8	Peculiar Support Equipment
1.9	Common Support Equipment
1.10	Operational/Site Activation
1.11	Industrial Facilities
1.12	Initial Spares and Repair Parts

Reporting Subcontractor Effort

- DID Section 3.4.3 requires contractors to report (separately) the combined software development effort of <u>all</u> their subcontractors

  – But the DID does not require primes to report effort discretely by subcontractor

- If the details aren't known (i.e. prime does not know sub's effort by activity), then the prime must report the total effort and identify what activities are included in the total effort in the SRDR Data Dictionary

Example for CSCI #1

Prime's SRDR:

	Map to WBS	Total Effort (Prime)	Total Effort (all other subs)
Preliminary Design	1.1.2.2	1234	X
Detailed Design	1.1.2.2	5678	X
Coding	1.1.2.2	9101	X
Unit Test	1.1.2.2	12131	X
SW Acceptance Test	1.1.2.2	13145	X
HW/SW Integration & Test	1.1.2.2	15167	
TOTAL		56456	32767

X = Included in Total

Note: Subcontractor's effort also includes SW PM, CM, QC, and data

Prime's SRDR Dictionary: "The subcontractor did not report effort by software development activity. The total subcontractor development effort includes Preliminary Design, Detailed Design, Coding, Unit Test, SW Acceptance Test, and SW PM/QA/CM/Data"

Other SRDR Data Elements

- SRDR Product Quality Reporting* (3.5)
  - Number of Defects Discovered (3.5.1.1)
  - Number of Defects Removed (3.5.1.2)
  - Comments (3.5.1.3)

* Optional for Initial Developer Report

Optional Data Elements

- All data elements identified in the DID are mandatory except:
  - 3.2.4.2 COTS/GOTS SW Integration Effort
  - 3.3.4.3 SW Size by programming language
  - 3.3.4.4 Standardized Code Counting*
- Optional elements are invoked via instructions in the remarks section of the contract plan and in the contract CDRL
- Remember: The DID prescribes the data elements, but NOT the manner in which the data should be presented

* Applies only to DI-MGMT-81740A

SRDR Data Dictionary Requirements
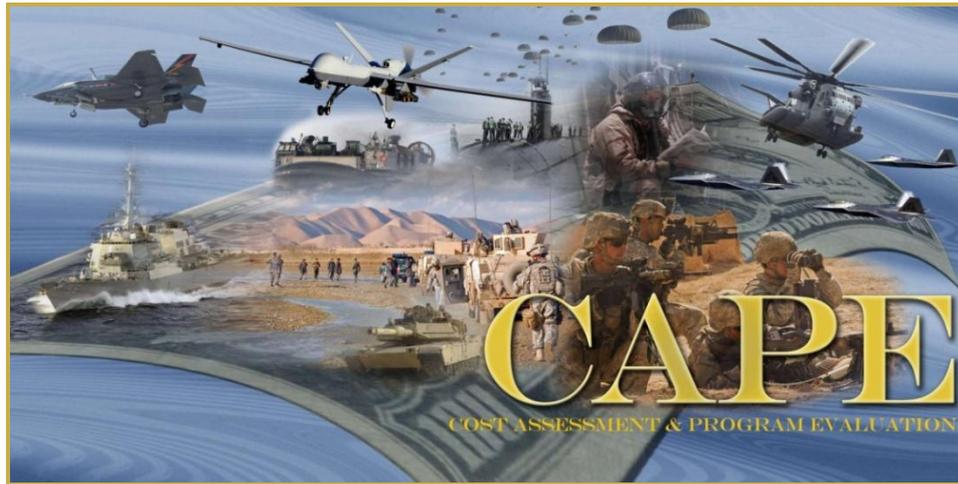
What is the SRDR Data Dictionary?

- A document which explains data definitions and any details required to correctly interpret the information provided in the SRDR

- The dictionary can be a separate document file or it can be embedded within the SRDR itself (example: A separate dictionary tab within an SRDR Excel file)

- <u>Every</u> SRDR submission must be accompanied by a SRDR data dictionary

- *Failure to submit an adequate dictionary will result in a rejection of the entire SRDR submission*

Data Dictionary Requirements

- SRDR data dictionary requirements are embedded throughout the DID
- Additional requirements include:
  - 3.6.1 Experience Levels
  - 3.6.2 Software Size Definitions*
  - 3.6.3 Software Size Categories*
  - 3.6.4 Peak Staffing
  - 3.6.5 Requirements Count (Internal)
  - 3.6.6 SW Requirements Count (External)
  - 3.6.7 Requirements Volatility
  - 3.6.8 Software Development Activities*
  - 3.6.9 Software Product Quality Reporting
  - 3.6.10 Comments

* Pay close attention to these items as they have been troublesome for contractors