GUIDELINES FOR THE PREPARATION AND MAINTENANCE OF CARD TABLES

1. CARD TABLE PREPARATION

1. The Cost Analysis Requirements Description (CARD) Tables describe the key technical, programmatic, and operational characteristics of an acquisition program using succinct tabular entries. The CARD Tables amplify the CARD Narrative to provide the essential information necessary to support the preparation of life-cycle cost estimates, budget estimates, support Program Objective Memorandum (POM) inputs, and more.
2. To accomplish this, CARD Tables have approximately 20 tables broken into four categories.
   1. Cost drivers by Work Breakdown Structure (WBS) element
   2. Program Quantities
   3. Detailed Program Lists
   4. Program Context
3. The initial CARD Tables must be prepared to support the first Milestone Review after the Materiel Development Decision (MDD). Commodity specific CARD Tables are available from https://cade.osd.mil/policy/card.
4. Following the initial Milestone review, the CARD Tables will be updated annually to reflect both the most recent President’s Budget and the anticipated POM and submitted to the appropriate Service Cost Agency and DCAPE. The CARD Tables that provide a detailed description of the acquisition program are used to prepare the ICE, POE, CCE, CCP, and other cost estimates, as required. CARD Tables should make liberal reference to other program documents (e.g., the Acquisition Strategy, Test and Evaluation Master Plan, or the Systems Engineering Plan) using the Source field on each Table. The CARD Tables must use/reference source documents that are current, authoritative, and provide the best available definition of approved program content. The preparation of the CARD Tables should be synchronized with the preparation of the source documents, so that the final CARD Tables are consistent with other final program documents. The CARD Tables must also be consistent with any contractual solicitations, such as an RFP or any related document (e.g., System Requirements Document).
5. The CARD Tables are augmented by the content of CARD narrative document. The CARD Tables align closely, but not totally, to the sections and sub-sections of the CARD narrative. The table below shows a cross-walk between the individual CARD Tables and the CARD narrative.

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| **CARD Narrative (Document) vs CARD Table (Excel Tabs) Cross-Walk** | | |
| **Table Name** | **Table Contents** | **Tie-in to CARD Narrative / Instructions** |
| SWAP | SWAP cost drivers | This table is augmented by the narrative contained in the Technical and Physical Description Section of the CARD. |
| Heritage | Percent new design and predecessor systems | This table is augmented by the narrative contained in the Technical and Physical Description Section of the CARD. |
| PMP Technical | Physical, performance, and configuration cost drivers | This table is augmented by the narrative contained in the Technical and Physical Description Section of the CARD. Additional context is contained in the following subsections of the Program and System Description Section: System Performance Parameters and Characteristics; Design Description, and Critical Technologies. |
| PMP Hardware Tech - ASIC & FPGA Size, Weight, and Power (SWAP) | Physical, performance, and configuration cost drivers specific to circuit cards, ASICs and FPGAs Physical attributes of PMP components | This table is augmented by the narrative contained in the Technical and Physical Description Section of the CARD. Additional context is contained in the Design Description, and Critical Technologies subsection of the Program and System Description Section. This table is an extension of the PMP Technical table providing additional space for detailed physical attributes of all components in the WBS. |
| Non-hardware Technical | Cost drivers for non-PMP cost elements | This table is augmented by the narrative contained in the following subsections of the Program and System Description Section: Test and Evaluation; Facilities Requirements. |
| Construction | Cost drivers for facility projects | This table is augmented by the narrative contained in the following subsections of the Program and System Description Section: Facilities Requirements. |
| O&S | Operating and support cost drivers | This table is augmented by the narrative contained in the System Operations and Support Concept Section of the CARD. |
| Software | Software cost drivers | This table is augmented by the narrative contained in the Software Description and Sizing Information Section of the CARD. |
| Acquisition Quantities, Fielding, and O&S Time Phased (Quantity and O&S Time Phased) | Acquisition quantities by year | This table is augmented by the narrative contained in the following subsections of the Program and System Description Section: Time-Phased System Quantity Requirements. |
| Configuration | The composition of configured end items | This table is augmented by the narrative contained in the Technical and Physical Description Section of the CARD. |
| Manpower Time Phased | Annual headcounts | This table is augmented by the narrative contained in the System Operations and Support Concept Section of the CARD. |
| LRU Level | Line Replaceable Unit (LRU) data | This table is augmented by the narrative contained in the Technical and Physical Description Section of the CARD. Additional context is contained in the following subsections of the System Operations and Support Concept Section: Maintenance. |
| Part Level | Bill Of Material (BOM) data | This table is augmented by the narrative contained in the Technical and Physical Description Section of the CARD. |
| Program | Program Description |  |
| Milestone | Program milestone dates | This table is augmented by the narrative contained in the following subsections of the Program and System Description Section: Program Milestone Schedule. |
| Contract | Contract descriptions for Investment & O&S Phases | This table is augmented by the narrative contained in the following subsections of the Program and System Description Section: Acquisition Strategy. |
| Roles | Primary suppliers and performers | This table is augmented by the narrative contained in the following subsections of the Program and System Description Section: Acquisition Strategy; Government-Furnished Equipment and Property. |
| WBS Definitions | Definitions of WBS elements |  |
| Metadata | Describes the CARD submission and contents of this file | The CARD PREPARATION sections Paragraphs C & D discuss submission frequencies. |

2. CARD TABLE CONTENT

1. The CARD Tables consist of tabular data in pre-formatted spreadsheet files. The tables are simply templates to aid in the initial publication of the CARD. Tailoring of the tables is encouraged, but shall be done in accordance with the guidelines below.
2. Level of Detail
3. While the Tables are structured to record the essential data on mature programs, it is recognized that the level of detail and certainty provided in the CARD Tables will depend on the maturity of the program. Programs at Milestone A typically have the least definition. Similarly, programs at Milestone B are less well-defined than programs at Milestone C or at Full Rate Production (FRP). Instead of tailoring the CARD Tables to reflect lack of details/uncertainty, the CARD Tables are designed to handle uncertainty and characterize the maturity of inputs. In the PMP Hardware Technical and Non-hardware Technical Tables, columns on the far right indicate which rows should be completed given each specific level of program maturity.
4. For uncertainties in program attributes, nominal assumptions should be specified for cost-estimating purposes. For example, if the future maintenance concepts are not yet determined, it would be necessary for the CARD (both narrative and Tables) to provide nominal assumptions about the maintenance concept.
5. For uncertainties in numerical data, ranges that bound the likely values (e.g., low and high values) are accommodated by the Table design. Expressing parameter values as a value-plus-margin is also accommodated by the Table design.
6. For uncertainties in design solutions or contractor down-select, the Tables are designed to convey multiple points of view or alternate reference designs. Expressing specifications as both Objective and Threshold values is also accommodated.
7. If the Government Reference Architecture or contractor solution does not provide data at the level required, it is acceptable to annotate a cell as “TBD” for To Be Determined. However, assignment of “TBD” values must be reviewed with the DoD Component cost agencies and CAPE (as applicable) to determine if the uncertainties in numerical and schedule data may be better represented by distributions or ranges which bound realistic values to facilitate costing of the program.
8. Most data items have fields for Source and Notes. Use the Source cells to convey where the data was obtained and “make liberal references to other program documents.” Enter full document title and date or enter the name of the Subject Matter Expert and Office Symbol. Use the Notes column to provide any additional information that is necessary to fully understand any row entry.
9. References to existing documents are permitted in lieu of direct value entry for these selected tables only (PMP Technical; Nonhardware Technical; SWAP; Heritage; Parts; Construction). When a Program Office chooses to provide reference documents in lieu of parameter inputs for the designated Tables, the Program Office must:
   1. for every blank parameter, whether core or non-core, specifically annotate the reference document and its date, e.g., Draft CDD as of 26 Feb 2015, in the Parameter row and Source column;
   2. place an “X” in lieu of the Parameter Input if the Parameter Input is blank and referenced in its Source column; and
   3. provide all reference documents when it submits its CARD.
10. It is acceptable to populate cells / fields of parameters that are not used by the acquisition program with NA for Not Applicable. For the common tables, if a field is not applicable to the program, fill the cell with an “NA” to represent that a conscious review of the cell was made by the program office and the cell is Not Applicable. If an entire parameter row is not applicable, enter “NA” only in the “Value” column.
11. Tables containing a pre-formatted WBS/Cost Reporting Structure (CRS) Number (Column B) may not adequately represent the WBS used by the Program Office. In those situations, insert a column immediately to the right and populate the applicable fields that map the Program Office WBS to the pre-formatted WBS/CRS. Do not delete pre-formatted rows that are NA.
12. CARD Table Mechanics
    1. Leave column A blank. This column is reserved for future use.
    2. When showing levels of indenture, use Excel's Indent function - do not enter leading spaces in the cell.
    3. Except in tables with “time phased” data where gaps may normally occur or as discussed earlier, do not leave a cell blank since it will appear to be an item not-yet-examined and waiting to be filled for this version of the CARD.
    4. Tables may be copied and repeated as needed. Use cell B3 to explicitly name the new sheet and rename the new tab to readily identify it and avoid confusion.
13. CARD Table Inputs (by Tab).
    1. SWAP. This Table contains Size, Weight, and Power information for all PMP hardware on a WBS item-by-item basis. The parameters include physical design attributes typically provided in Preliminary Design Review (PDR) or Critical Design Review (CDR) reports, contractor Technical Data Reports, Mass Properties Reports, and Weight and Balance Reports. Each row represents a WBS item. Enter values in the unit of measure specified at the top of each column, converting to the required unit of measure if necessary.
       1. Weight: Enter the total weight of the WBS item including margin if applicable.
       2. Weight – Structural: Enter the non-electronics portion of the total weight of the WBS item with margin.
       3. Weight – Electronics: Enter the electronics portion of the total weight of the WBS item with margin (includes circuit cards, power supplies, wiring, and microwave plumbing and components; excludes enclosures, racks, cabinets and other mechanical items such as slides, blowers, heat sinks, etc.).
       4. Power – Maximum Consumption Rate: Enter the power consumed by the WBS item when the item is in the mode requiring maximum power.
       5. Volume: Enter the volume of the WBS Item. If the item is highly complex in shape and volume would not normally be considered as a cost driver for that type of item, enter “NA”.
       6. If margins, low and high values, or objective/threshold values are available for weight, power, or volume, select the ungroup button above Column AD to expand the cells in this table and add these inputs.
    2. Heritage: This Table contains design heritage information for all PMP hardware on a WBS item-by-item basis. This data is typically provided in Technology Readiness Assessment (TRA) Reports. Each row represents a WBS item.
       1. New Design: Enter the percentage of effort required to develop the item relative to the effort that would be required to develop the item if there was no heritage from previous designs. Keep in mind that design engineers are typically present during the entire development process and their effort does not end with drawing release.
       2. Predecessor System: Enter the name of the system from which the new item will draw the most design heritage. If the New Design percentage is zero, enter “NA”.
       3. Source: Where did the value come from? (cite document name and date, SME name and office symbol, etc.)
       4. Notes: Use this column to document assumptions, interpretations, and mathematical manipulations used to generate the New Design percentage.
    3. PMP Technical Table. This Table provides system physical, performance and configuration values that are cost drivers in estimating methodologies such as CERs. The values are also useful in identifying analogous systems and scaling their cost. The parameters include physical design attributes typically provided in PDR or CDR reports, TRA Reports, and contractor Technical Data Reports. Also included are key performance parameters established through the Joint Capabilities Integration and Development System (JCIDS) and documented in an approved capability needs document (Capability Development Document or Capability Production Document). The rows are organized by WBS with applicable parameters listed below each element name. The Parameter Name, Unit of Measure, and Definition are prepopulated. Tailor the WBS to reflect program specifics.
       1. Value: Enter parameter values as a single value in this column.
       2. Low, High, Margin: If needed, hit the Ungroup button above the Unit of Measure column to see Uncertainty columns. If parameter value is uncertain, and cannot be expressed as a single value, use the Low and High columns to enter a range. (This is not meant for full probabilistic expression of parameter uncertainty. But if a probabilistic expression is needed, enter the most-likely value in the Value column, the bounds in the Low and High column, and the confidence levels in the Notes column.) Alternatively, parameter names such as “Weight – Growth Allowance” may be used to identify margin.
       3. Objective, Threshold: If needed, hit the Ungroup button above the Source column to see these columns. Enter Requirements Specification Objective and Threshold.
       4. Estimate or Actual: Identify if the parameter value is an actual value or an estimated value.
       5. Source: Where did the value come from (cite document name and date, SME name and office symbol, etc.)?
       6. Notes: Notes should include the following:
          1. Any information to help understand any differences from the source data and the definition.
          2. For example, while the Power requirements for electronics should be the steady state value, the notes might also include start power.
          3. Cite analogous system in the notes if applicable.
       7. Alternate (e.g. Second, Third etc.) Reference Designs (e.g. Independent Review Team, Contractor A, Contractor B, etc.): If these columns are expanded (using the ungroup button above the Definition column) and used to present an alternative design solution, ensure each design is labeled in the first column heading cell.

If new additional parameters are needed simply insert a row and provide the Parameter Name, Unit of Measure, Definition, and enter “New” in the VocabID column.

Some of the parameters are repeatable and named “1…n” which can be replicated as many times as necessary. To use these effectively, use the Units Qualifier to distinguish each row.

The PMP Hardware Technical Table may be broken into a more manageable set of Tables if desired (e.g., Aircraft, Engine, Avionics, C4I Electronics). This has already been done for the standard commodity set of tables. Maintain the same column arrangement for each PMP table. The PMP Hardware Technical Tables from multiple standard commodity templates can be copied into a single workbook to address systems of systems such as a space system consisting of satellites (Space Systems template) and a ground control network (AIS C2 Center).

* 1. Select commodity workbooks may also contain variations of the PMP Hardware Tech including:
     1. PMP Hardware Tech - ASIC & FPGA. This Table is an extension of the PMP Hardware Technical Table and shares the same column structure. This table provides cost drivers specific to circuit cards, Application-Specific Integrated Circuits (ASICs), and Field Programmable Gate Arrays (FPGAs). These fields are repeatable in blocks. The ASIC block should be copied, pasted and renamed for each ASIC design, and the FPGA and circuit card block should be repeated likewise.
  2. Construction. This Table is an extension of the PMP Hardware Technical Table and shares the same column structure and input requirements. This table provides cost drivers specific to construction projects. Descriptions of three types of projects are enabled: new construction, modifications/additions, and minor construction. The parameters for each are in grouped rows which may be copied, pasted and renamed for each applicable WBS element.
  3. Non-Hardware Technical. This Table provides cost drivers for non-PMP WBS cost elements, also known as Common elements. Common element cost drivers enable direct parametric estimation in lieu of factoring estimated cost using PMP cost. These parameters can be found in the Integrated Master Schedule, the Systems Engineering Plan, the Master CDRL, System Requirements Specifications (A-Specs), the Test & Evaluation Master Plan, and the CLIN List. The column arrangement and instructions are the same as for the PMP Hardware Technical Table. These elements may apply to Government efforts as well as contractor depending on the definition of each element.
  4. O&S. This Table addresses Operating and Support parameters necessary to estimate the cost of maintenance and other O&S costs. It identifies how the system will be employed and organized in peacetime, contingency, and wartime situations. The column arrangement and instructions are very similar to the PMP Hardware Technical Table. It is not time-phased. The essential time-phased data for sustainment are on the Quantity Table and the Manpower Table. This Table is for static values or constants.
  5. Software. This Table includes software development cost drivers. Software is an integral part of all systems today, and exists at many levels within the system. Software sizing and descriptors are necessary for robust software development cost estimates.

The Software Table should be replicated for each Software WBS element. In cells C5 and C6 enter the WBS/CRS element and name.

Unlike the other CARD Tables, software rows and columns are transposed. Unique attributes in each software release and CSCI are described in columns, not rows. Insert columns for additional CSCIs, as needed, and label the columns. Enter values per row Parameter Name and Definition. If CSCI-level data is not available, then use the CSCI columns to present the values for the entire release.

The cell shading on the Software Development Table helps to distinguish if inputs are required by Release or by CSCI. White cells under the Release column pertain to Release-level parameters only. White cells under the CSCI column pertain to CSCI only.

For CSCIs being developed incrementally, it will be necessary to display the sizing information for each Increment or Build. For CSCIs being developed using the Agile concept, it will be necessary to display sizing information (e.g., story points, themes, user stories), schedule, and productivity (e.g., burn-down, backlog) for each Sprint. This Table also includes schedule milestone information regarding both the CSCI builds, and the dependencies between the CSCIs and related hardware.

Prior to MS B, the CARD likely includes planning data from a reference system or from an analogous system, as opposed to actual data on the system being developed. The Software Development Table accommodates these types of inputs in support of early cost estimates. Later, when the system is being developed, this Table allows the program to collect the software actuals.

The WBS on the PMP Hardware Technical Table includes a subset of the Software Development Table technical data fields for software components. These fields can be used as an initial location for pre-MS B reference system or analogous system data, or as the final technical data for very small software end items rather than using a Software Development Table. However, all software items from the PMP HW Technical Table should have a corresponding Software Development Table to capture the actual data for the software being developed on-contract.

This Table is structured to match the Software Resources and Data Reporting (SRDR) Data Item Description (DID) (DI-MGMT-82035A) as closely as possible. If software development information has already been reported in a submitted SRDR, it should be relatively simple to paste that data into this Table. Detailed software specific instructions can be found in the SRDR DID.

* 1. Software Maintenance. This Table includes software maintenance cost drivers. Software parameters are necessary for robust software maintenance cost estimates. Detailed software specific instructions can be found in the SRDR, Software Maintenance DID (DI-MGMT-82035A). General Instructions are similar to the Software Development Table. If this section’s information has already been reported in a submitted SRDR, it does not need to be duplicated. However, provide a reference to the specific SRDR submission containing the pertinent data. Note that this form is particularly well-suited for describing an instance (say a one-year period) of software maintenance. To extend this to the entire life-cycle, consider adding annual Maintenance SRDR submissions to the O&S table or the quantity Time Phased table.
  2. Quantities, and O&S Time-Phased Table. This Table identifies the quantities of systems, training devices and support equipment to be developed, procured, and deployed. This type of data can be found in the PDR or CDR reports, Capability Production Documents, Acquisitions Strategy, and Integrated Master Schedules. Quantity is a critical cost driver necessary to calculate total cost and unit cost metrics such as Program Acquisition Unit Cost (PAUC) and Average Procurement Unit Cost (APUC). Also, cumulative quantity information is necessary for O&S cost calculations. Any systems associated with backup inventory or attrition reserve will be identified in a separate row. If possible, any system quantities associated with known foreign military sales (FMS), other Services, or Other Government Agencies (OGAs), should be identified and displayed in separate rows. For systems that routinely deploy, this section will also describe the anticipated deployment approach of the system in terms of number of sites and nominal operating locations.
     1. Column instructions:
        1. Annual quantity requirements are shown by column. Replace each column heading “YR (1…n)” with actual fiscal year (FY) beginning at the earliest year quantity data is applicable. List all program years, adding columns if necessary. Avoid using “Prior” and “To-complete” columns - be explicit. Note that early years may be known and future years forecasted so designate each column as Estimate or Actual in Row 6.
        2. Long Lead Requirements: For procurement quantities, enter text describing long lead requirements in the column following the years. Long lead may be expressed either as a percent of funds or by listing specific items that must be purchased early. Consider describing this in the narrative as well. Otherwise enter NA.
        3. Unit of Measure and Unit Qualifier: Unit of Measure is “Quantity” and Unit Qualifier is Aircraft, Engines, All Up Rounds, Radars, Silos, Sites, Vehicles, Hulls, etc.
        4. Source and Notes columns inputs are similar to that stated already for other tables.
     2. Row instructions: The Table rows are organized by overarching type of quantity, further divided by major end item. In addition to Prime Mission Product end items, provide quantities for support equipment and training devices as appropriate. Enter the recognized name of each item to include its configuration or variant name or designation. The same recognized end item name should be used on the Configuration Table.
        1. Prototype Quantity: Enter annual quantities here. Convey the FY of delivery to the associated test activity. Include engineering units and test articles.
        2. Procurement Quantity: Enter annual quantities here. For procurement-funded items, use the FY in which the quantities will be procured in accordance with full funding policy. Include non-PMP items also.
        3. Concurrent Production Quantity: Enter annual concurrent production quantities here. Concurrent production represents units produced by the contractor for other parties such as FMS or any other customer.
        4. Number of Deliveries: Enter annual operational quantity installed or delivered here. Do not show deliveries for FMS or other customers. This is pertinent for modeling fielding event costs or install costs.
        5. Inventory or Fielded Density (by Item): Enter the cumulative quantities, both refurbished prototype and procurement units, delivered and supported here. Not applicable to FMS or other customers. This is pertinent for modeling annual O&S costs. Show ramp-down as items leave service at end of their useful life.
        6. Inventory/Fielded Density (by Location): Enter the cumulative quantities, both refurbished prototype and procurement units, delivered and supported by location here. This is pertinent for modeling annual O&S costs that are location-sensitive. Show ramp-down as items leave service at end of their useful life.
        7. Operational Activity: Enter annual activity or Operations Tempo by annual miles or hours as appropriate. Expand by Location or End Item as needed. If an alternative metric (other than annual miles or hours) is appropriate for the system, use it. Some alternative metric examples are also shown on the Table
        8. Number of Disposals: Enter annual quantity of items leaving service at end of useful life. This is pertinent for modeling demilitarization and disposal costs as well as density ramp-down.
        9. Number of Overhauls or Scheduled Depot Maintenance: Enter annual quantity of overhauls or any other scheduled Depot activity here. This is pertinent for modeling Depot costs.
        10. Number of Hardware Modification Kit Procurement: Enter annual quantity of kits purchased for modification events here. This is pertinent for modeling Mods costs.
        11. Number of Hardware Modification Installs: Enter annual quantity of modification installs here. This is pertinent for modeling Mods costs.
        12. Number of NDI Refresh Events: Enter annual quantity of Non-Developmental Item (NDI) refresh events here. This is pertinent for modeling refresh cycle costs.
        13. Number of Training Events: Enter annual classes and other events here. This is pertinent for modeling Training costs.
        14. Number of Base Activation: Enter quantity of sites activated here. Entries often will simply be 1 if each site is explicitly named by row. This is pertinent for modeling base activation costs and to begin location-specific costs.
  3. Configuration. This Table identifies the composition of configured end items. Mapping subsystems/component quantities to end item quantities provides an understanding of total quantity necessary for proper rate/learning curve analysis. This data can often be found in the PDR or CDR reports. Values entered will be the quantity per end item ship-set. The rows are WBS items which may be further divided into subsystem or specific parts if needed (enter their name in the Lower-level Assembly or Part column). The columns represent end-item configurations. Each named column should correspond to the end-items named in the rows of the Quantities and O&S Time Phased table. The column names shown in the empty Table are examples only – customize columns to suit the program being described. Maintain the same naming scheme contained in the Quantities and O&S Time Phased table.

* 1. Manpower Time Phased. This Table provides annual headcounts (by phase & major function) necessary to support a staff-loading methodology. Depict the entire staffing mix in the System Program Office and associated OGAs. Avoid Prior To or To-Complete columns. Use the drop-down menu in the Estimate or Actual row to identify quantities as estimated or actual. It is recommended to calculate the staffing requirements using Full-Time Equivalents (FTE) as the Unit of Measure for the Manpower Time Phased table. The Constant per System Value column can be populated to capture staffing requirements on a per system basis instead of time-phasing the total. When doing so, confirm these constants yield unambiguous results when multiplied by the applicable time-phased contents of the Quantities and O&S Time Phased table (e.g. Density). Insert rows to capture contractor staffing if needed. All entries should be FTEs
     1. Column Instructions:
        1. YR 1 to YR n: Rename columns in row 5 for all program FY. List all program years, adding columns if necessary. Avoid using Prior and To-complete columns - be explicit. In row 6 designate each column as Estimate or Actual. Enter annual values for FTEs in the rows below.
        2. Unit of Measure: The default Unit of Measure is FTE. If otherwise enter the unit of measure.
     2. Row Instructions:
        1. For the Acquisition phase, describe the System Program Office Staff divided into Government Civilian and Military personnel and Support Contractor personnel. Enter a summary of these personnel in rows 8 – 24. If a detailed breakout by function is preferred, ungroup rows 26-122 and enter functional headcounts below each summary category child element.
        2. Beginning with row 126, enter the personnel requirements for other Government agencies supporting the program.
        3. Beginning with row 146, enter O&S phase personnel requirements for the broad categories of Operate, Maintain, Support, and Train. In the Item Name columns enter category of manpower. Use headings in bold and indent using wherever it is useful. Use children to describe Grade to the extent needed. (Use Excel's Indent function - do not enter leading spaces in the cell). Repeat the Table by major organization, command, location, or theater as needed.
        4. In addition to the direct O&S categories of Operate, Maintain, Support, and Train, enter personnel requirements for Systems Engineering, Program Management, and continuing Software efforts throughout the remainder of the life cycle.
  2. LRU. This Table arrangement is suitable for any listing of Line Replaceable Units. This level of detail is necessary for bottom-up estimates, maintenance estimating, and performing component analysis. The table is oriented to show parts by row with part numbers and names in the columns. Use the first two columns to show WBS elements as needed for organization. Use the next three columns to identify and describe the LRUs. The Material Data Report Data Item Description, DI-FNCL-82009, provides additional information on the reliability parameters. Column instructions:
     1. WBS Element Code: Enter the applicable WBS element codes in numeric decimals (e.g., 1.0 for parent, 1.1 for child of 1.0, 1.1.1 for child of 1.1). See MIL-STD-881 (current version) for standard WBS policy
     2. WBS Reporting Element Name: Enter the name of the applicable WBS reporting elements. See MIL-STD-881 (current version) for standard WBS policy.
     3. Part or Identifying Number (PIN): The Identifier assigned by the original design activity, or by the controlling nationally recognized standard, that uniquely identifies, relative to that design activity. A specific item (ASME Y14.100 - 2017 pg 9 para 3.57)
     4. Item Identification: Enter the Item Identification. Item Identification is the combination of the original design activity PIN and Design Activity Identification (DAI) to establish an identification unique to that item
     5. Part Description: Enter a brief description of the item being purchased. The description should also be consistent with internally generated systems established to plan, control and account for acquisition, use, and disposition of the material part.
     6. NSN: Enter the National Stock Number.
     7. WUC/LCN: Enter the Work Unit Code or Logistics Control Number
     8. WUC/LCN Element: Enter the recognizable element associated with the WUC/LCN.
     9. WRA/SRA: Enter whether the part is a Weapons Replaceable Assembly or a Shop Replaceable Assembly.
     10. MTBUR: Enter the mean time between unscheduled removals relating to demand for logistics support.
     11. MTBUR Unit of Measure: Enter the system life in flight hours, operating hours, cycles, months, etc.
     12. MTBUR Type: Enter Specification, Design Controllable Prediction, Operationally Dated Estimate, Actual from non-representative operational environment or from representative operational environment.
     13. MTBUR Inherent, Induced, or Both: Enter the most appropriate selection.
     14. MTBR-S: Enter the mean time between removals, scheduled, related to demand for logistics support resulting from preventive maintenance.
     15. MTBR-S Unit of Measure: Enter units similar to those stated in MTBUR.
     16. MTBR-S Type: Enter units similar to those stated in MTBUR Type.
     17. MTBR-S Inherent, Induced, or Both: Enter the most appropriate selection.
     18. End Item Unit Cost: Enter the Recurring Cost in Then-Year dollars (U.S. $) for a single end item.
     19. End Item Ship Set Cost: Enter the Recurring Cost in Then-Year dollars (U.S. $) for the quantity of end items required to form a ship set for a single unit of the "Prime Mission Product"
     20. End Item Non-Recurring Cost: Enter the Non-Recurring Cost associated with the end item in Then-Year dollars (U.S. $).
     21. End Item Total Cost: Enter the sum of the "End Item Prime Mission Product Cost", End Item Spares Cost, "End Item Additional Item Cost in Then-Year dollars.
     22. End Item Cost Year: Enter the Government fiscal year for which the costs are based.
     23. Step Pricing: Enter "Y" for yes, or "N" for no. Identify if pricing steps or increments providing different unit prices for different quantity ranges of item are applicable.
     24. Average Repair Cost: Enter the repair cost in Then-Year dollars (U.S $) for a single end item.
     25. Repair Cost Year: Enter the Government fiscal year for which the costs are based.
     26. Basis of Repair Cost: Enter the Code indicating History, Market Analysis, Engineering Estimate, Competitive Vendor Quote, Sole Source Vendor Quote, Long Term Pricing Agreement, Actual Cost Paid on Long Term Purchase Agreement, or Actual Cost Paid on Discrete Purchase Agreement. Code H: History. Code MA: Market Analysis. Code EE: Engineering Estimate. Code CQ: Competitive Vendor Quotes. Code SQ: Sole Source Vendor quotes. Code L: Long Term Pricing Agreement. Code AL: Actual Cost Paid on Long Term Pricing Agreement. Code AD: Actual Cost Paid on Discrete Purchase Agreement
  3. Parts. This Table arrangement is suitable for any listing of parts or equipment such as Bill of Material (BOM) reports or contractor proposal BOMs, a spares package, or support equipment. This level of detail is necessary for bottoms-up estimates, maintenance estimating, and performing component analysis. The table is oriented to show parts by row and identifying information in columns. Use the first two columns to show WBS elements as needed for organization. The following five data columns identify and describe the parts. If a full indentured BOM is available then it may be submitted in place of this table. Column instructions:
     1. Prime Contractor's Part Number: Enter the Prime Contractor's part number.
     2. Original Equipment Manufacturer (OEM) Part Number: Enter the OEM’s part number.
     3. Part or Identifying Number (PIN): The Identifier assigned by the original design activity, or by the controlling nationally recognized standard, that uniquely identifies, relative to that design activity. A specific item (ASME Y14.100 - 2017 pg 9 para 3.57)
     4. Item Identification: Enter the Item Identification. Item Identification is the combination of the original design activity PIN and Design Activity Identification (DAI) to establish an identification unique to that item
     5. Part Description: Enter a brief description of the item being purchased. The description should also be consistent with internally generated systems established to plan, control and account for acquisition, use, and disposition of the material part.
     6. National Stock Number (NSN): Enter the National Stock Number associated with the part. If no NSN exists at the time of the report, then enter NA.
     7. Serviceable Y/N: Choose "Y" for yes if the item is designed to be repairable and "N" for no if it is not.
     8. CFE or GFE: Enter CFE for Contractor Furnished Equipment, GFE for Government Furnished Equipment.
     9. Make/Buy: Enter M for Make (if the part was built in-house), or B for Buy (if the part was bought). Make Items: Items produced within the contractor's facility. Where the contractor transforms raw materials into a finished end item through the use of manufacturing processes. Buy items: Items that the contractor outsources to a subcontractor/supplier.
     10. Technical Data Rights: Enter the technical data rights associated with End Item in accordance with Department of Defense Federal Acquisition Regulations Supplement (DFARS).
     11. Technical Data Delivery: Enter the CDRL number associated with the delivery of the End Items' Technical Data. Enter "NA" if Technical Data is not being delivered.
     12. Warranty: Enter "Y" for yes or "N" for no to identify any written guarantee, issued by its manufacturer to the purchaser, promising to repair or replace items if necessary within a specified period of time. If "Y", the Reporting Organization will provide warranty terms in the Comment Field.
     13. End Item Unit Cost: Enter the Recurring Cost in Then-Year dollars (U.S. $) for a single end item.
     14. End Item Ship Set Cost: Enter the Recurring Cost in Then-Year dollars (U.S. $) for the quantity of end items required to form a ship set for a single unit of the "Prime Mission Product"
     15. End Item Non-Recurring Cost: Enter the Non-Recurring Cost associated with the end item in Then-Year dollars (U.S. $).
     16. End Item Total Cost: Enter the sum of the "End Item Prime Mission Product Cost", End Item Spares Cost, End Item Additional Item Cost in Then-Year dollars.
     17. End Item Total Cost Year: Enter the Government fiscal year for which the costs are based.
     18. Step Pricing (Y/N): Identify if pricing steps or increments providing different unit prices for different quantity ranges of item are applicable.
     19. CMP End Assembly Pegging (Yes/No): Enter "Y" for yes, or "N" for no. Identifies if an end item is a Hard or Soft Peg Component.
     20. End Item Basis of Cost (EIBOC) Recurring: Enter the BOC code for Recurring Basis of Cost for the End Item.
     21. End Item Basis of Cost (EIBOC) Non-Recurring: Enter the BOC code for Non-Recurring Basis of Cost for the End Item.
  4. Program Table. This Table provides summary level program descriptors. For a new program, it sets up the program’s DAMIR and DCARC descriptors. For an ongoing program it should align with DAMIR and DCARC descriptors. Column instructions:
     1. Value: Enter parameter values as text.
  5. Milestones Table. This Table provides program milestone dates needed to time-phase the estimate as well as provide durations needed to estimate time-sensitive costs. This data can be found in the Acquisition Strategy, Integrated Master Schedule, or Selected Acquisition Report. A row is provided for each milestone and may be further tailored by inserting additional rows to convey additional program-pertinent milestones and events. Column instructions:
     1. Standard Milestone Name: To the extent possible use standard recognized milestone names. Many of these names are prepopulated. When any parameter calls for additional detail for the End Item or associated Sub-Programs, insert new or replicate rows underneath and indent sub-names as needed.
     2. Program-Unique Milestone Name: If a standard parameter name is not satisfactory, enter a program-unique name.
     3. Date: Enter date.
     4. Estimate or Actual: Identify if the date is an actual value or an estimate.
     5. For additional columns to express alternative points of view, hit the Ungroup button near the top of the spreadsheet. When expanded, take care to label each alternative in the first column heading cell.
  6. Contracts Table. This Table provides an overview of each program Phase to include contracting strategy, competition, and individual contract and lot information. This data can be found in the Acquisition Strategy. Start/End dates are needed to estimate time-sensitive costs. Contract information is necessary to frame estimated contract costs and to subsequently link to contractor-submitted cost reports. Acquisition phases appear in the first column of the Table.
  7. Roles. This Table contains the program WBS Number and WBS Element (name) and identifies the primary suppliers and performers. This data can be found in the Acquisition Strategy. This data is necessary to calculate contract loads by vendor tier. The rows are organized by program WBS. Column instructions:
     1. Government Role: Specify Government's Role by WBS Element (e.g., GFE, Depot Activation). On a typical developmental program this column will likely be blank for the PMP elements given that the Prime contractor will deliver the capability. For common elements this information will augment the Government Agency information on the Acquisition Table.
     2. Prime Contractor: Specify Prime Contractor Name by WBS Element.
     3. Secondary Subcontractor/Supplier/Third Party: Specify Subcontractor/ Supplier/ 3rd Party by name.
     4. Tertiary Subcontractor/Supplier/Third Party: Specify Subcontractor/ Supplier/3rd Party by name.
     5. Notes: Elaborate on specific role or contracting arrangement in the Notes column if needed.
  8. WBS\_CRS Definition. This Table contains the program WBS in three columns: WBS Number, WBS Element (name), and WBS Definition. This data can be found in program and contract WBS dictionaries.
  9. Metadata. This Table provides administrative and program information on the overall CARD Table submission such as dates, author, and contact info. This is necessary to keep up with multiple versions of a CARD Table and/or contact authors. Enter data useful for tracking, storing, and later retrieving this CARD.

1. Tracking to prior CARD Tables. By maintaining the same CARD Table structure/format and updating the Metadata section information throughout the program lifecycle, changes to the CARD Table will be readily discernable.

3. POTENTIAL DATA SOURCES

The following program documents and contractor deliverables should be referenced to initially populate the CARD tables:

* Acquisition Strategy/Acquisition Plan
* Cost & Software Data Reports
* Cost Performance Reports/Integrated Program Management Reports (Format 4 for contractor staffing data)
* Prior Cost Analysis Requirements Description
* Preliminary Design Report
* Critical Design Report
* Integrated Master Schedule (IPMR Format 6)
* Initial Capabilities Document
* Capability Development Document
* Capability Production Document
* Systems Engineering Plan
* Master CDRL
* System Requirements Specifications (A-Specs)
* Test & Evaluation Master Plan
* CLIN List
* Technology Readiness Assessment (TRA) Report
* Bill of Materials Report
* Life-Cycle Sustainment Plan
* Independent Logistics Assessment