

CRS RESOLUTION PROCESS

PURPOSE: This document describes the specific process that DMEA personnel are directed to follow to resolve Customer Requests that are entered into the Customer Request System (CRS).

DIRECTION: When processing requests that are entered in CRS, the process shown below is to be utilized in the sequence of steps listed herein (unless otherwise noted) to ensure that the most efficient and effective solutions are found for DMEA's customers with respect to technology, cost, and schedule. Any waivers to forgo following the specific sequence of any of the steps listed herein must first be approved by DMEA management. Any directions in the process that do not specify a subject shall be interpreted as having the subject "Microelectronics Engineer".

PROCESS:

1.0 Receiving Customer Requests

- 1.1 Customer contacts DMEA for help with a technology problem.
- 1.2 If the technology problem is not consistent with DMEA's mission, then refer the Customer to a more appropriate organization for resolution, if possible.
- 1.3 If the technology problem is consistent with DMEA's mission, then obtain the following data from the Customer and record it as a new Customer Request in CRS:
 - 1.3.1 Title / Name (First, Last)
 - 1.3.2 Telephone Number / Fax Number
 - 1.3.3 Email Address
 - 1.3.4 Select "DoD" or "non-DoD" / Agency (if DoD) / Organization
 - 1.3.5 Weapon System to which the Customer Request relates
 - 1.3.6 Request Memo (700 characters maximum to describe the Customer's assessment of the problem)
- 1.4 Branch Chief receiving the Customer Request assigns it to a Microelectronics Engineer.

2.0 Obtaining Part Data and Requirements

- 2.1 Contact the Customer and obtain as much information as possible to fully understand how best to satisfy the Customer's problem. This information may include, but is not limited to:
 - 2.1.1 Part problem(s) experienced (e.g., obsolescence, failure history).
 - 2.1.2 Next higher assembly(ies) on which the part(s) is(are) used.
 - 2.1.3 Quantities needed (and timeframe that quantities are expected to support).
 - 2.1.4 Alternate part numbers (if any were specified by OEM).
 - 2.1.5 Where the Customer has attempted to find or procure applicable part(s) and any relative success. These may include the OEM, CLS contractor, DLA, and microelectronics aftermarket sources among others.
 - 2.1.6 Additional issues (beyond part availability) that is currently affecting the applicable next higher assembly, subsystem, and subsystem. These may include issues relating to maintainability (MTTR, MTBM), reliability (MTBF), and supportability (MLDT), as well as any desires the Customer may have for increased capability.
- 2.2 Update the Customer Request with the requirements developed from Customer discussions and subsequent analysis of the information gathered in Step 2.1.

3.0 Researching Item Availability (If the Customer Request includes multiple parts, then treat each part individually for the whole of Step 3.0.)

- 3.1 Though the Customer and their sources may have tried to find elusive parts through microelectronics aftermarket sources, it is important to check these potential sources again as their inventories tend to fluctuate; therefore, investigate availability of the part (including alternate parts and substitute parts, if known) through internet searches or telephone calls with all reputable microelectronics aftermarket sources.
- 3.2 For each type (original, alternate, substitute) of the part for which some quantity was found, document in the Associated Files area of CRS the quantity found, the quoted price, and the contact information for the microelectronics aftermarket source.

4.0 Developing Solution Options

- 4.1 Taking into account the range of issues affecting the system—especially the additional issues (beyond part availability) that were obtained in Step 2.1.6—comprehensively assess the associated system to evaluate areas of risk and opportunities for inserting transformative technologies. As part of this assessment, consider overarching issues affecting microelectronics is DoD applications. These may include issues related to MIL quality requirements, lead free restrictions, prevalence of counterfeit parts in the supply chain, access to trusted IC suppliers, anti-tamper designs, assured supply, etc.
- 4.2 Investigate the feasibility of a complete range of solutions that address the total cost of ownership utilizing a Total Life Cycle Systems Management (TLCSM) approach, in some cases leveraging advanced technologies to solve multiple problems simultaneously. These may include, but are not limited to efforts that:
 - 4.2.1 Provide part for part solutions in cases where sufficient types and quantities were found in Step 3.0.
 - 4.2.2 Re-engineer a part to provide a form-fit-function replacement.
 - 4.2.3 Re-engineer a part and provide a part solution utilizing a newer technology that reduces total life cycle costs.
 - 4.2.4 Re-engineer a next higher assembly (or higher assembly unit) and provide a higher-order solution to enhance capability, improve reliability and maintainability, or eliminate future obsolescence concerns and reduce total life cycle costs.

Steps 4.2.1 – 4.2.4 are not shown in any order of precedence, and the order of the list should not be interpreted as a solution direction. The Customer ultimately chooses their preferred solution.

- 4.3 Considering the system's profile and all feasible solutions developed in Step 4.2, develop strategic solution implementations that cover the range of these feasible solutions that are strategically viable. Ensure that the explanation of each strategic solution implementation clearly explains the cost (in both time and resources) involved as well as the implementation's effect on the total life cycle systems ownership cost of the system. The costs of the various solutions should take into account information found in Resolution Cost Factors for DMSMS.

5.0 Selecting a Feasible Solution

- 5.1 Provide the Customer with the trade study comparing the feasible solution options and DMEA's recommendation along with a personal discussion or presentation, as appropriate, so that the Customer fully understands all significant tradeoff information necessary for the Customer to make an informed decision between the feasible solution options.
- 5.2 Customer chooses the option they view as optimal, considering their time and resource constraints. After the presentation of options, if the Customer has not contacted DMEA within an appropriate time (as was agreed upon at the presentation or within three weeks, whichever comes first), then contact the Customer for status and to offer further assistance, if necessary.
 - 5.2.1 If the Customer chooses to eschew all feasible solution options, or if there seems little chance of the Customer making a choice six months after the presentation of options, then alert the Branch Chief that the Customer Request should be closed. Stop here.
 - 5.2.2 If the Customer selects an option involving a form-fit-function replacement or a part solution utilizing a newer technology and the Customer provides all pertinent available information and resources to DMEA, then alert the Branch Chief. The Branch Chief then converts this Customer Request into a new DMEA Microelectronics Project in the Microelectronics Project System (MPS) and closes the Customer Request. Skip Step 5.2.3.
 - 5.2.3 If the Customer selects an option involving re-engineering the next higher assembly to provide a higher-order solution and the Customer provides the necessary information and resources to DMEA, then alert the Branch Chief. The Branch Chief then converts this Customer Request into a new DMEA Microelectronics Project in the Microelectronics Project System (MPS) and closes the Customer Request.

6.0 Executing the Selected Solution

- 6.1 If the Customer selected an option involving a form-fit-function replacement or a part solution that uses a newer technology, then proceed to Step 6.3.
- 6.2 If the Customer selected an option involving re-engineering the next higher assembly to provide a higher-order solution, then the Branch Chief assigns a Microelectronics Project Engineer to effect the solution.

- 6.2.1 The Microelectronics Project Engineer develops an Advanced Technology Support Program (ATSP) Contractual Engineering Task (CET), IAW established DMEA procedures, with the goal of enlisting the interest of DMEA's defense industry partners (the ATSP Contractors) in participating in the development of the higher-order solution. The CET should utilize the ATSP Contractor to assist in designs where their weapon system expertise augments that of DMEA and to procure the fabrication of associated technology solutions that are designed by DMEA or the ATSP Contractor.
 - 6.2.2 If none of DMEA's defense industry partners (the ATSP Contractors) expresses interest, then skip Step 6.2.3.
 - 6.2.3 If one or more of DMEA's defense industry partners (the ATSP Contractors) expresses interest, then the Microelectronics Project is executed with the assistance of an ATSP Contractor IAW established DMEA procedures and a Project Plan developed collaboratively by DMEA and the ATSP Contractor. If the ATSP Contractor is unable to procure the fabrication of any associated technology solutions that are designed by DMEA or the ATSP Contractor, then proceed to Step 6.3 for that particular technology solution; otherwise, the process is complete here.
- 6.3 The Branch Chief assigns a team of Microelectronics Project Engineers including a lead Microelectronics Project Manager.
- 6.3.1 The team assesses DMEA's ability to fabricate the technology solution in the DMEA ARMS Foundry.
 - 6.3.2 If the assessment performed in Step 6.3.1 is affirmative, then the Microelectronics Project Manager verifies the terms of the license agreement for the specified manufacturing process to ensure that the licensee is appropriately provided first right of refusal.
 - 6.3.2.1 If the licensee opts not to fabricate the technology solution, then skip Step 6.3.2.2.
 - 6.3.2.2 If the licensee opts to fabricate the technology solution, then the team provides them the design information for fabrication and comes to an agreement on a schedule for delivery. The process is complete here.
 - 6.3.3 The Microelectronics Project is executed and the technology solution is fabricated using the DMEA ARMS Foundry IAW established DMEA procedures and a Project Plan develop by the team.