**Manufacturing Readiness Assessment**

**2. MRA PROCESS**



**2.5. Document the MRA**

The objective of this lesson is for each student to comprehend the process for documenting the assessment.

**2.5.1. Describe the steps associated with documenting the MRA.**

**Step One: Collect missing data**

It is not unusual for a team to come away from an assessment without some pieces of information. A particular process or certain personnel may not have been available during the assessment. In fact, some of that missing information may be key data. The first thing the team must do is be sure they collect any missing data.

**Step Two: Call a team meeting**

A team meeting should be held within two weeks of the on-site assessment. During this meeting final plans can be made regarding how to proceed with documenting the results of the assessment.

**Step Three: Finalize assessment results**

The assessment results are discussed and finalized at the team meeting. The preliminary report that was given to the contractor at the end of the assessment will be reviewed, and any new information will be taken into consideration. The final results will then be decided upon.

**Step Four: Examine current plans**

Before the final report is submitted the MRA team looks at any current programs and manufacturing plans for risk reduction. The team will be looking to see if those plans are effective, and if not, what changes should be made to make them effective.

**Step Five: Agree on completion MRL**

The team will discuss and come to an agreement about what the final MRL should be upon completion of the milestone. It is assumed that the contractor will follow the plan set forth in the assessment, and by doing so, this final MRL will be achieved.

**Step Six: Share results**

The contractor is made aware of preliminary results at the completion of the on-site assessment.

**Step Seven: Identify specific risk reduction activities**

In addition to reviewing current programs and plans for risk reduction, the team examines what, if any, other programs and plans are necessary for the program to reach the next milestone.

**Step Eight: Identify necessary activities**

The team will identify the funding, time-phasing, and approach needed for each of the specific risk reduction activities they decided were necessary for the program to reach the next milestone.

**Step Nine: Submit the final report**

Upon completion of the other eight parts of the documenting the results, the MRA team will prepare and submit the final report.

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**2.5.2. Identify the information covered in the MRA report.**

**Technologies**

A description of the technologies, including identification of the key elements, the key objectives of the technology development effort, and a discussion of the current state of the art.

**TRLs**

The current TRL of the key technology elements are identified.

**Technology elements**

A discussion of the companies who are responsible for the key technology elements.

**Team members**

A list of the MRA team members is included, along with their backgrounds and any specialties.

**Site visits**

A list the dates and locations of all site visits is included in the report.

**Manufacturing processes**

A detailed description of the manufacturing processes for the key technology elements.

**MRLs**

For each key process or hardware element, a description of the assessed MRL is made.

**Shortfalls**

Any areas where manufacturing readiness falls short of the target MRL will be noted. Included in these notes will be an identification of key factors and a definition of driving issues.

**Plans**

Identification of any programs and plans needed to reach target MRL.

**Risk**

The report will include an assessment of the type and significance of risk(s) to cost, schedule or performance.

**Effectiveness**

An assessment of the effectiveness of current risk mitigation plans will include answers to the following questions:

Do they address the right issues?

Are they timely?

Are they adequately funded?

What is the probability of success?

Are there options for increased effectiveness?

**2.5.3. Describe the manufacturing maturation plan.**

* Title
* Statement of the problem

Describe the technology / process and its maturity status.

Describe how this technology / process would be used in the system.

* Solution options

Describe the benefits of using the preferred technology / process.

Describe fall-back options and the consequences for each option.

* Maturation program plan with schedule and funding breakout.
* Describe key activities for the preferred technology / process.
* Describe preparations for using an alternative technology / process.
* Show the latest time that an alternative technology / process can be chosen.
* The status of funding for this technology / process maturation.
* List specific actions to be taken.
* What prototypes or test articles will be built?
* What tests will be run?
* How does the test environment relate to the operational environment?
* What threshold performance must be met?
* What MRL will be achieved and when will it be achieved?

**2.5.4. Describe the parts of the mitigation plan.**

* Identification of the system, subsystem, or component.



* A description of the manufacturing problem.
* An assessment of the program impacts on cost, schedule, and technical risks.
* A development of alternative solutions.