

**GUIDANCE ON
ACCREDITATION of MODELS FOR THE AoA (July 2004)**

The following (Appendix G in the AoA Handbook) is provide as an example of the Accreditation Report for an AoA, which should develop to document and validate the individual and federated models being used in the AoA. This process is accomplished to provide confidence to the Models and Simulations (M&S) Accrediting Authority that the tools being used in the AoA will accomplish reasonable analysis and deliver results that are believable to the operational and acquisition community.

It is critical that this process be done only after the study team has determined the important measures that must be evaluated in the study. The selection of the M&S must occur only after a clear understanding has been developed as to the important things that must be measures by the tools in the accomplishment of the analysis

This guidance provides several items to get the study team going: 1) Accreditation Statement– Transmittal Cover MEMO; 2) Cover for the “Model and Data Accreditation Report”; 3) Table of Contents for the Report; 4) an Executive Summary; and 5) the body of the report “Model and Data Accreditation Report for *Project name* AoA”.

ACCREDITATION STATEMENT – TRANSMITTAL COVER MEMO

DD-MMM-YY
MEMORANDUM FOR HQ *MAJCOMs/DR*

FROM: HQ *MAJCOMs/DRA*
Address

SUBJECT: Accreditation Report for *Project name* Analysis of Alternatives (AoA).

I have reviewed the recommendations contained in the attached model accreditation report. On the basis of this review, I accredit the use of the following model(s) by HQ *MAJCOMs/DRA* for the *Project name* AoA:

List the Model(s)

List any restrictions

Signature Block for HQ MAJCOMs/DR

Attachments:

- 1: Title Page for the **Model and Data Accreditation Report**
2. TABLE OF CONTENTS, **Model and Data Accreditation Report**
3. Executive Summary for **Model and Data Accreditation Report** for *Project name* AoA
4. **Model and Data Accreditation Report** for *Project name* AoA

Model and Data Accreditation Report

For

Project name

Analysis of Alternatives (AoA)

Date 01-05-04

Prepared by

MAJCOM/DR

Author

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EXECUTIVE SUMMARY
For
Model and Data Accreditation Report
For
Project name Analysis of Alternatives (AoA)

1. Problem Statement

State the Mission Tasks (MTs) from the AoA, list the proposed models that will evaluate the corresponding measures of effectiveness (MOEs), and explain what you expect the analysis to provide in terms of alternative solutions.

2. Usage of Selected Models

Write a description of each model giving a quick look at its proposed utility. Explain the MOEs that the model will address, and how they relate to the Mission Tasks or functional objective. Show the overall model architecture and associated federations.

3. Key Participants

List the participants in the accreditation process. Identify the voting and non-voting members that were included on the panel. Also include their organizations and their roles/responsibilities. Finally, state who the overall accreditation officer is and provide his/her office symbol.

4. Model selection and Data Requirements

Explain the selection process that led to the identification and selection of the model(s) to be used in this analysis. Describe the overall data requirements for the analysis, the intended sources, and the expected pedigree of the data.

5. Accreditation Methodology

Give a brief explanation of the accreditation plan and process. Include a list of criteria that will be used to evaluate the acceptability of the model(s). You can find examples of appropriate criteria in the OAS Handbook on-line. If possible, some type of collaborative system should be used during the accreditation meeting so that comments and discussions can be captured and included in the final accreditation document. Also, during the meeting, such things as how data linkages between models are established need to be addressed in detail. The best way to confirm models will work together is to have the model user's talk face to face on their models capabilities and data requirements. Also, explain which MOEs are addressed by which models. All MOEs should be supported by analysis and support specific mission tasks.

6. Summary of Model(s) Accreditation Results

List each model and summarize the accreditation results. Show how each model scored against the chosen selection criteria. This is best shown by the use of a "stop-light chart". Models that have scored well on specific criteria are given a green color for that area. Models that have some problems concerning specific criteria are given a yellow. A green/yellow indicates minor changes can be made that would allow the score to become green. A yellow/red indicates significant changes to the model must be made in order for it to be useful in the analysis. The color red is given to criteria that make the model unacceptable for use in the analysis. For models other than green and green/yellow, the extent of changes required needs to be explained. Such things as cost, schedule delays, and risk need to be shown in detail. Remember also, the overall model architecture (to include all model linkages) must be reviewed and accredited; and that any major model change will affect this overall federation. Again, this architecture is best evaluated by face-to-face discussion between the accreditation panel and the model operators during the accreditation process.

7. Acceptability Criteria and Model Assessments

Provide a statement of confidence for each model(s) resulting from the accreditation process. At this point it would be best to show a chart displaying the models to be used (based on this accreditation), their linkages, and the MOEs associated with each model. This will provide a clear picture of the planned analysis process. Any perceived risks in using the accredited models should be fully explained and proposed ways to mitigate the risks should be addressed.

OAS will be able to provide samples of past reports for other AoAs if requested to do so

8. Summary Comments and Recommendations

Summarize the success potential for the models selected along with the potential federated model architecture for the study being executed. Include pertinent comments on the accreditation process used and the potential of the models to successfully support the planned study. Provide the recommendation from the MAJCOM DR/XR on the desired accreditation of all the models being evaluated for this study.

Model and Data Accreditation Report for *Project name* AoA

1. Problem Statement

- 1.1. State the goal of this report in terms of model(s) accreditation for your AoA analysis architecture in terms of Mission Tasks
- 1.2. Provide a statement that this document will fulfill the requirement for formal accreditation of all models and their architecture proposed for the AoA analysis.
- 1.3. Describe AoA and analysis requirements
- 1.4. Explain what you expect the model(s) to produce in terms of alternative solutions

2. Usage of Selected Models

- 2.1. Describe the expected utility of each listed model
- 2.2. Identify MOEs
- 2.3. Indicate that each MOE will be addressed by at least one model
- 2.4. Show overall model federation for the analysis

3. Key Participants

- 3.1. List all participants and their office symbols in the accreditation process
- 3.2. Highlight voting members
- 3.3. State who is the Accreditation Officer and his/her office symbol

4. Model selection and Data Requirements

4.1. Threat and Scenarios

- Explain the selection process for scenarios to be used in the analysis
- Discuss the pedigree of the threat databases to be used in the analysis
Identify any expected problems with either scenario or threat data

4.2. Model Architecture

4.2.1. Input data

- Discuss input data requirements for models and where this data will come from
- Discuss pedigree of input data

4.2.2. Output Data

- Describe expected output data from each model and how it will flow as input to the next model

4.2.3. Linkage Diagram

- Provide a detailed chart explaining the data linkages and associated MOEs for the analysis

5. Accreditation Methodology (Model Evaluations)

5.1. Model Name and Short Description (**First Model**)

5.1.1. Evaluate model in terms of supporting Mission Tasks and MOEs

5.1.2. Explain history and past model usage

5.1.3. V&V History

5.1.3.1. Configuration Management (CM)

- Evaluate quality of CM

5.1.3.2. Version Changes and Enhancements

- Evaluate CM in terms of major changes (if any)

5.1.3.3. User Documentation Available

- Evaluate quality of User Manuals, etc

5.1.3.4. Assumptions, Limitations, and Possible Errors

- Assess any limiting assumptions, shortcomings, and obvious errors in the V&V process

5.1.4. Evaluate model in terms of all other criteria selected for evaluation in the Accreditation process

5.1.4.1. User Experience e.g.

5.1.4.2. Functionality e.g.

- 5.1.4.3. Other Supportive information on the Model, Etc
- 5.2. Model Name and Short Description (**Second Model**)
 - Repeat paragraph 5.1 for each model under consideration for each criterion
 - 5.2.1. Evaluate model in terms of supporting Mission Tasks and MOEs
 - 5.2.2. Explain history and past model usage
 - 5.2.3. V&V History
 - 5.2.3.1. Configuration Management (CM)
 - Evaluate quality of CM
 - 5.2.3.2. Version Changes and Enhancements
 - Evaluate CM in terms of major changes (if any)
 - 5.2.3.3. User Documentation Available
 - Evaluate quality of User Manuals, etc
 - 5.2.3.4. Assumptions, Limitations, and Possible Errors
 - Assess any limiting assumptions, shortcomings, and obvious errors in the V&V process
 - 5.2.4. Evaluate model in terms of all other criteria selected for evaluation in the Accreditation process
 - 5.2.5. User Experience e.g.
 - 5.2.6. Functionality e.g.
 - 5.2.7. Other Supportive information on the Model, Etc

NOTE, FOR MORE INSIGHT ON A REASONABLE METHOD FOR EVALUATION OF INDIVIDUAL MODELS, AND THE FEDERATION OF A GROUP OF MODELS, PLEASE REFER TO CHAPTER 5, OF THE OAS ANALYSIS HANDBOOK, DATED MARCH 2004, PAGES 58-65, SEE LINK: <http://www.oas.kirtland.af.mil/AoAHandbook/AoAHandbook.pdf>.

- 6. Summary of Model(s) Accreditation Results
 - 6.1. List models
 - Show how they fared with respect to accreditation criteria
 - 6.1.1 Provide Rationale
 - 6.2. Show “Stoplight Chart”
 - 6.3. Linkage Assessment
 - 7. Acceptability Criteria and resultant Model Assessments
 - 7.1. Risk Assessment
 - 7.1.1. Assess Risks
 - Address risk involved in using planned models/architecture
 - Explain plan for mitigating risk
 - 7.2. Show summary of total architecture to include all MOEs and associated linkages
 - 7.3. Summary Comments
 - 8. Summary Comments and Recommendations
 - 8.1. Accreditation Comments
 - Summarize success potential of model architecture
 - 8.2. Recommendations
- MAJCOM DR