

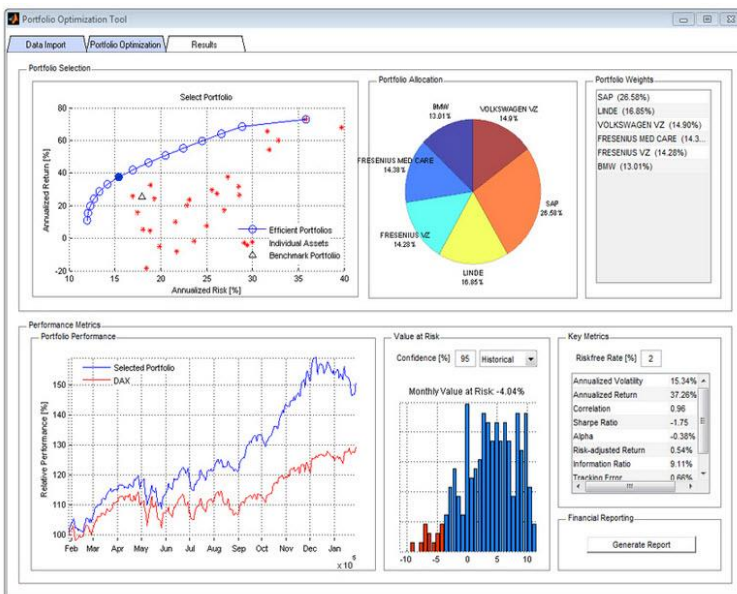


Get up and running fast. **MathWorks Consultants** know the right tool for the job, and can integrate your MATLAB applications with IT and business constraints, which makes for easier deployment workflows and reduced maintenance costs.

Production environments require robust code, efficiency, and a 24/7 uptime. MathWorks Consultants have experience developing efficient platforms using MATLAB and deploying fast, scalable, and powerful solutions to enterprise systems. MathWorks Consultants advise you on best practices for handling production rigor and maintaining the analytical components developed in MATLAB.

“MathWorks Consultants interacted with us at a strategic level, documenting our business objectives and using their technical expertise to translate our requirements into system functionality.” – RWE

AUTOMATED SYSTEM FOR NATURAL GAS AND POWER TRADING AND RISK MANAGEMENT



MathWorks Consultants help you to:

- Establish foundational processes and plan for the successful deployment of MATLAB applications in business critical applications
- Instantiate complex analytics and algorithms in MATLAB and deploy to production environments in a scalable manner
- Assist in the proper capture of requirements, planning, design, implementation, testing, and deployment of MATLAB applications
- Reduce development effort, defect densities, and time-to-market
- Design and implement code to make best use of MATLAB

“MathWorks Consultants were well-qualified, professional, and fast. They understood not only the technical issues but also the business goals, which is essential when working on a core business system.” - **DR. NORBERT TONDER**
IT PROJECT MANAGER

[Selecting a MATLAB Application Deployment Strategy](#)
by Dr. Titus Edelhofer, MathWorks Consulting Services

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Model-Based Design Process Assessment

MathWorks Consulting Services conducts a Model-Based Design Process Assessment™ to determine the current state of your organization's Model-Based Design process, to discern the high-priority process issues that face your organization, and to start the actions needed for process improvement. As part of the Model-Based Design Process Assessment, your organization and technologies are benchmarked against industry best practices and state-of-the-art automation tools.

MathWorks Consulting Services works with global companies in a wide range of industries, including aerospace, defense, and automotive, to improve their Model-Based Design processes.

The [Model-Based Design Process Assessment](#) is an unbiased evaluation of your company's methods, tools, practices, organizational structure, and environment. The assessment identifies the highest-priority areas for improvement and recommends a detailed plan for making those improvements. The purpose of the assessment is to implement a common set of industry-proven, successful Model-Based Design practices across all development teams to meet the vision and goals of your organization. The scope and formality of the assessment will depend on your organization's size and needs.

A Process Assessment will help you:

- Improve Model-Based Design processes
- Benchmark your company's Model-Based Design process
- Obtain a baseline for improving quality, productivity and return on investment
- Provide immediate and long-term improvement plans for reducing defects while meeting project schedules and budget
- Promote use of in-house best practices across the whole organization

A typical assessment follows three steps:

1. Familiarization with Existing Processes, Organization, Technology, and Objectives

MathWorks Consultants review the current software development process, organizational structure, development, and testing tools, and objectives at both the group and organizational levels.

2. Management and Technical Staff Interviews

Using MathWorks' [Model-Based Design Maturity Framework™](#), a senior MathWorks Consultant interviews management, software developers, and Model-Based Design practitioners within your organization to understand existing people, processes, and technology capabilities and the issues and objectives for improving the existing environment. From these interviews, MathWorks develops an overview of your organization's needs, a recommended set of critical improvements, metrics, and actions that can be implemented immediately within key project teams.

3. Immediate and Long Term Improvement Plan

MathWorks Consulting Services provides feedback and suggestions to management regarding recommended changes and improvements, giving priority weighting to those of near-term value. MathWorks Consulting presents its findings and recommendations to senior management and discusses opportunities for improvement in skill levels and process and technology capabilities, including an overview of what's required to achieve the organization's stated goals. MathWorks outlines the overall requirements and cost for implementation.

Assessments are conducted by senior MathWorks Consultants, who are experts in organization-wide Model-Based Design adoption and deployment. Model-Based Design Process Assessment clients include companies from the aerospace, defense, automotive and industrial automation industries.

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MathWorks Software Version Upgrade Service

There are many reasons to consider upgrading to a new version of software, such as access to new functionality to address increasing complexity of designs, compliance with regulatory standards at a lower cost and increase in performance and scalability. In evaluating any upgrade, there are many factors to consider such as timeframe, functional capabilities, technical infrastructure, and underlying business needs. These factors are often complex and interrelated – all of which adds to the importance to determining the most appropriate upgrade strategy.

MathWorks software version upgrade service is intended for companies who are planning to upgrade to a newer version of MathWorks tools. MathWorks Consulting works with customers worldwide to facilitate a seamless migration to a new release with the first-hand knowledge of new product enhancements. The goal of the service is to execute upgrades efficiently and accurately by applying proven practices for migrating to a new version.

MathWorks Consulting will:

- Develop an upgrade project strategy and plan
- Assess the models, tools and development processes currently in practice
- Determine the appropriate upgrade version based on the underlying business and technical goals
- Identify new tools, features and enhancements to existing features that can be leveraged to meet the business and technical goals
- Identify a project or a representative set of existing models to migrate to the new version
- Perform an upgrade impact test and analysis on the models, model architecture, process, tools, and infrastructure. Document incompatibilities and issues related to models, process, and custom and third-party tools.
- Identify custom tools, patches and infrastructure that can be retired or optimized by adopting new features or tools
- Develop a regression testing framework to facilitate the upgrade verification. This framework can be used for development testing and for future version upgrade efforts
- Migrate the models, tools and process to the new version. The scope of this effort can range from a few representative set of models that cover the variety or the entire project. A documented step-by-step approach to migrating to the new release will be provided.
- Identify training needs, develop materials and provide training on relevant features, tools and best practices for adopting them.

FOR MORE INFORMATION:

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MathWorks DO-178 Certification Advisory Service

MathWorks Consulting Services works with you to migrate your existing process to one that uses Model-Based Design to develop DO-178 compliant software. Customized to your specific environment, tools, and application, the DO-178 Certification Advisory Service will identify gaps in your current processes, develop a road map to an optimized DO-178 process using Model-Based Design, and work with you to deploy that road map. MathWorks Consulting Services prepares you to perform key software development and verification activities to satisfy objectives of DO-178C and its supplemental documents DO-330 (Software Tool Qualification Considerations) DO-331 (Model-Based Development and Verification) and DO-333 (Formal Methods).

The DO-178 Certification Service is delivered by senior-level MathWorks consultants with knowledge gained from years of developing high-integrity software in collaboration with customers in the aerospace industry. **MathWorks Consulting Services** helps organizations avoid common mistakes and reduce the time, effort, and cost to develop high-integrity software that satisfies DO-178 objectives.

MathWorks Consulting Services works with you to:

Perform key activities to comply with DO-178

- Requirements traceability
- Requirements-based testing
- Model standards checking
- Model and code coverage
- Code reviews, traceability, and analysis
- Test case generation and design analysis
- Tool configuration and code generation
- On-target testing of algorithms
- Tool qualification using the DO Qualification Kit
- Generation of DO-178 process artifacts

Plan and execute

- Migrate your company's existing development process using a phased approach to achieve efficiency gains

Train your team

- Learn how to apply and fully leverage Model-Based Design to maximize benefits and satisfy objectives in DO-178 and its supplements

Next steps:

The migration strategy to an optimized software development process that uses Model-Based Design for DO-178 varies by company and application. MathWorks Consulting Services will tailor the process to best fit your needs. Steps may include:

Evaluation of existing processes and tools—MathWorks consultants review your current software development process, tools, application, required safety levels (A-E), and planning documents.

Gap analysis—Our consultants identify current challenges, process efficiency improvements, training, and other

recommendations for migrating to a DO-178 process framework using Model-Based Design. We develop an actionable road map using a phased approach to achieve the recommended improvements.

Knowledge transfer—We provide instruction to show how Model-Based Design and its supported toolchain can be applied to satisfy objectives of DO-178 and its supplements.

Hands-on deployment support—MathWorks consultants support implementation of the recommended process to a specific project. Tasks may include modeling, simulation, code generation, and preparation of DO planning documents such as the PSAC.

FOR MORE INFORMATION:

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