



MMOG/LE OVERVIEW

STREAMLINE AND OPTIMIZE SUPPLY CHAIN MANAGEMENT WITH QAD MMOG/LE SOLUTIONS

IMPROVE PERFORMANCE IN THE AUTOMOTIVE SUPPLY CHAIN

The growing global automotive industry depends on a standard level of performance for material flow throughout the supply chain. As original equipment manufacturers (OEMs) embrace lean manufacturing principles, it is paramount that every supplier delivers the right product to the right place at the right time. For automotive suppliers, this means delivery performance must be superior to acceptable standards for some other industries. Automotive suppliers must possess the ability to balance production with demand in an efficient manner, avoiding the high costs of excess inventory, obsolete products and premium freight charges.

Today, as more automotive manufacturers extend their supply chains and presence to new markets, OEMs and Tier 1 suppliers are attempting to leverage global standards for key manufacturing capabilities and expectations. A common, industry-wide set of best practices for supply chain management will accelerate development of the global automotive industry and move the industry toward perfect delivery performance.

WHAT IS MMOG/LE?

Materials Management Operations Guideline/ Logistics Evaluation (MMOG/LE) is a comprehensive

self-assessment required by many OEMs and Tier 1 suppliers. Nearly the entire automotive industry uses MMOG/LE in the supply chain to evaluate production and parts, service and warehousing processes. The assessment also establishes a common definition of supply chain management processes to help organizations:

- Determine the robustness of existing internal processes
- Benchmark supply chain operations
- Facilitate continuous improvement
- Increase customer satisfaction
- Streamline the flow of information and products throughout all tiers of the supply chain

The Automotive Industry Action Group (AIAG), the North American automotive standards association, and its European counterpart, Odette, introduced MMOG/LE in 2002 to improve global supply chain management. Global OEMs such as Ford, GM, Chrysler, Volvo Car, Volvo Truck, Jaguar/Land Rover, Renault and PSA require MMOG/LE globally. In recent years, Tier 1 automotive suppliers have also embraced MMOG/LE, requiring their suppliers to complete the assessment. These organizations typically require an annual update of the assessment to ensure that suppliers continue to maintain established best practices.

With the introduction of version 4 in 2014, MMOG/LE includes both a Full and Basic assessment. Although designed for lower tiers of the automotive supply chain, the Basic version retains all the core fundamental principles of the Full version.

Full	Basic
<ul style="list-style-type: none"> • Used by OEM with Tier 1 • Six chapters • 197 criteria • A,B and C Levels • Level A indicates world class 	<ul style="list-style-type: none"> • Used with Tier 2-N • Six chapters • 106 criteria • ZA, ZB and ZC Levels • Level ZA indicates fundamentals are in place

Figure 1: A comparison of the Full Assessment to the Basic Assessment.

The MMOG/LE assessment process provides a pathway to migrate progressively from the Basic to the Full version as competence improves, and the supplier moves closer to world-class best practices. Organizations should verify with specific customers whether they require the Full or Basic assessment.

WHAT DOES MMOG/LE LOOK LIKE?

The MMOG/LE assessment is a Microsoft Excel® workbook. The workbook contains:

- Two assessments: Full and Basic
- Six chapters to outline the components of supply chain (See Figure 2)
- A gap analysis sheet for recording action plans
- Criteria to assess an organization's supply chain processes and capabilities
- An automated scoring and classification system with the categories of A, B, and C in the Full version and ZA, ZB and ZC in the Basic version.
- Integrated tools for analyzing gaps, developing action plans and tracking progress
- Charts to graphically summarize and communicate assessment results
- Background information and recommendations on how to use MMOG/LE

CHAPTER 1 - STRATEGY AND IMPROVEMENT
1.1 Vision & Strategy 1.2 Objectives 1.3 Measurement, Analysis, and Action Plans 1.4 Continual Improvement 1.5 Supply Chain Development
CHAPTER 2 - WORK ORGANIZATION
2.1 Organizational Processes 2.2 Operating Procedures and Work Instructions 2.3 Resource Planning 2.4 Work Environment & Human Resources 2.5 Risk Assessment and Management
CHAPTER 3 - CAPACITY & PRODUCTION PLANNING
3.1 Product Realization 3.2 Capacity Planning 3.3 Production Planning 3.4 Systems Integration
CHAPTER 4 - CUSTOMER INTERFACE
4.1 Communication 4.2 Packaging & Labeling 4.3 Shipping 4.4 Transportation 4.5 Customer Satisfaction & Feedback
CHAPTER 5 - PRODUCTION & PRODUCT CONTROL
5.1 Material Identification 5.2 Inventory 5.3 Engineering Change Control 5.4 Traceability
CHAPTER 6 - SUPPLIER INTERFACE
6.1 Supplier Selection 6.2 Supply Chain Management Agreement 6.3 Communication 6.4 Packaging & Labeling 6.5 Transportation 6.6 Material Receipt 6.7 Supplier Assessment

Figure 2: Six-chapter outline of the components of MMOG/LE supply chain operations.

MMOG/LE KEY AREAS OF FOCUS

MMOG/LE focuses on critical supply chain management issues, including customer requirements, capacity constraints, contingency planning, supplier capability, resource allocation and employee skills. MMOG/LE helps organizations to address all of these issues, but also covers areas of your business, where automation and systems can significantly increase plant efficiency. The MMOG/LE supply chain process model, shown in Figure 3, provides a visual overview of the chapters and business processes covered within MMOG/LE.

WHO IS INVOLVED IN COMPLETING THE MMOG/LE ASSESSMENT?

When a customer requires an assessment, the organization's executive management must participate in the sessions. A single individual within the organization should coordinate and supervise the assessment. QAD recommends that the site's Supply Chain Manager act as the coordinator. In a multi-site organization, QAD advises that the company appoint an MMOG/LE Champion to ensure a consistent approach and promote sharing of lessons learned across all facilities. In addition to top management and the supply chain manager, QAD recommends that at least the following people or roles participate:

- Purchasing/procurement manager
- Production manager
- Engineering manager
- Distribution manager
- Human resources
- Quality manager

- IT/IS staff
- Key operational personnel at all facilities

MMOG/LE IS SIMPLY GOOD BUSINESS

Automotive suppliers around the world have used the MMOG/LE assessment to improve materials management operations and logistics. Companies typically report inventory reductions as high as 50 percent and most report equally significantly improvements in the organization's delivery performance. MMOG/LE will highlight areas where enterprise technology helps automate processes to eliminate error-prone manual processes.

Other critical business process improvements reported by companies who used MMOG/LE:

- Reduced inventory carrying costs up to 50%
- Reduced premium freight costs by 85%
- Reduced obsolescence costs by 80%
- Improved delivery rating or service rates up to 15%
- Reduced employee training by 50%
- Acquired new business

History has shown that companies achieve the best results from using MMOG/LE when executive management actively participates and continuous improvement is a discipline rooted in the organization's culture.

QAD AND MMOG/LE

QAD is the proven industry leader when it comes to helping organizations achieve MMOG/LE Level

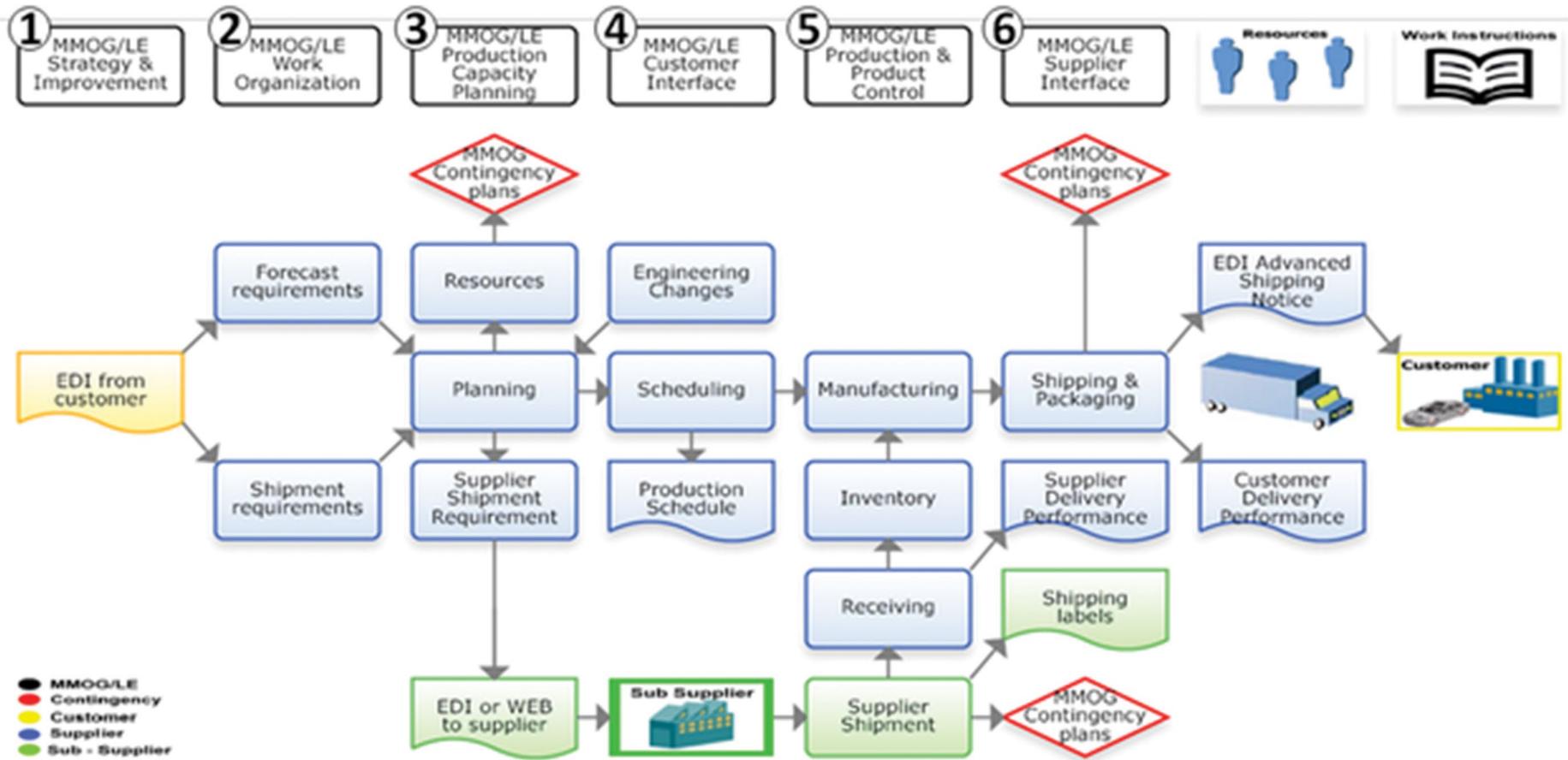


Figure 3: MMOG/LE Supply Chain Management Process Model.

A classification. QAD's unique MMOG/LE tools and solutions ensure your organization is successful in completing your assessment and that your ERP solution aligns with industry best practices.

QAD MMOG/LE LEADERSHIP

QAD is a member of the global AIAG/Odette MMOG/LE Work Group. Through this work group, QAD has participated in the development and implementation of MMOG/LE for over 10 years. QAD is also an MMOG/LE trainer on behalf of AIAG and Odette in North America, Asia-Pacific and Eastern Europe.

MMOG/LE ANSWER SHEET

QAD's MMOG/LE Answer Sheet provides detailed information about exactly how QAD solutions and

Q-Scans can help an organization to meet all MMOG/LE assessment criteria.

MMOG/LE Q-SCAN CONSULTATION

The MMOG/LE Q-Scan Consultation is available as a two-day engagement. This consultation shortens the timeframe for automotive suppliers to comply with MMOG/LE by preparing your organization on how to complete the assessment, get ready for a customer audit, or to benchmark your operations against industry best in class organizations. The MMOG/LE Q-Scan Consultation identifies gaps and recommends process improvements to attain the highest score—Level A.

During the two-day engagement, our specialized consultants will ensure that your organization's:

- MMOG/LE Level classification would match the customer's audit, based on an in-depth review of key criteria used by OEMs and the industry
- Customer-specific requirements are addressed
- Criteria "Comments Boxes" and work instructions conform to the appropriate level of detail
- Management understands the organization's score and any performance gaps

QAD ERP SUPPORTS YOUR MMOG/LE REQUIREMENTS

We built QAD Enterprise Applications for the automotive industry to support MMOG/LE compliance requirements through simple configuration. With embedded functionality such as EDI and Web-based supplier communications, supply chain management, bar coding, release management, business process management and lean manufacturing our solution not only ensures your business aligns with industry best practices, but also aligns with MMOG/LE standards.

Our unique MMOG/LE tools and features including hundreds of common automotive industry KPIs, operational metrics and process maps to allow your organization to measure operational performance. These tools provide direct insight into your operational practices and business processes.

MMOG/LE Process Maps and Work Instructions

QAD created our unique MMOG/LE Automotive Process Maps to help increase individual and departmental understanding of the key assessment points of MMOG/LE. The MMOG/LE automotive

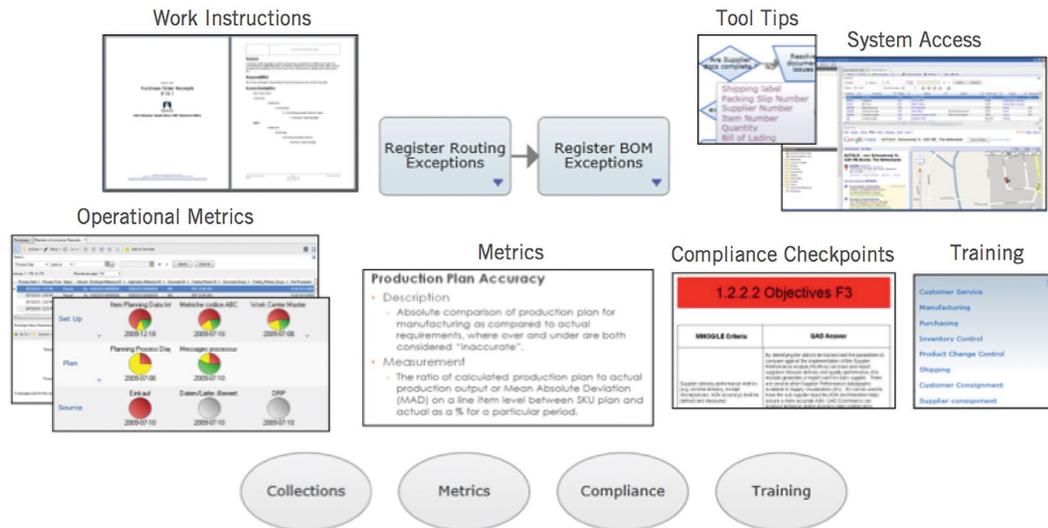


Figure 4: QAD Enterprise Applications is a robust ERP solution that directly incorporates automotive best practices to help manufacturers excel in today's market, while achieving MMOG/LE compliance.

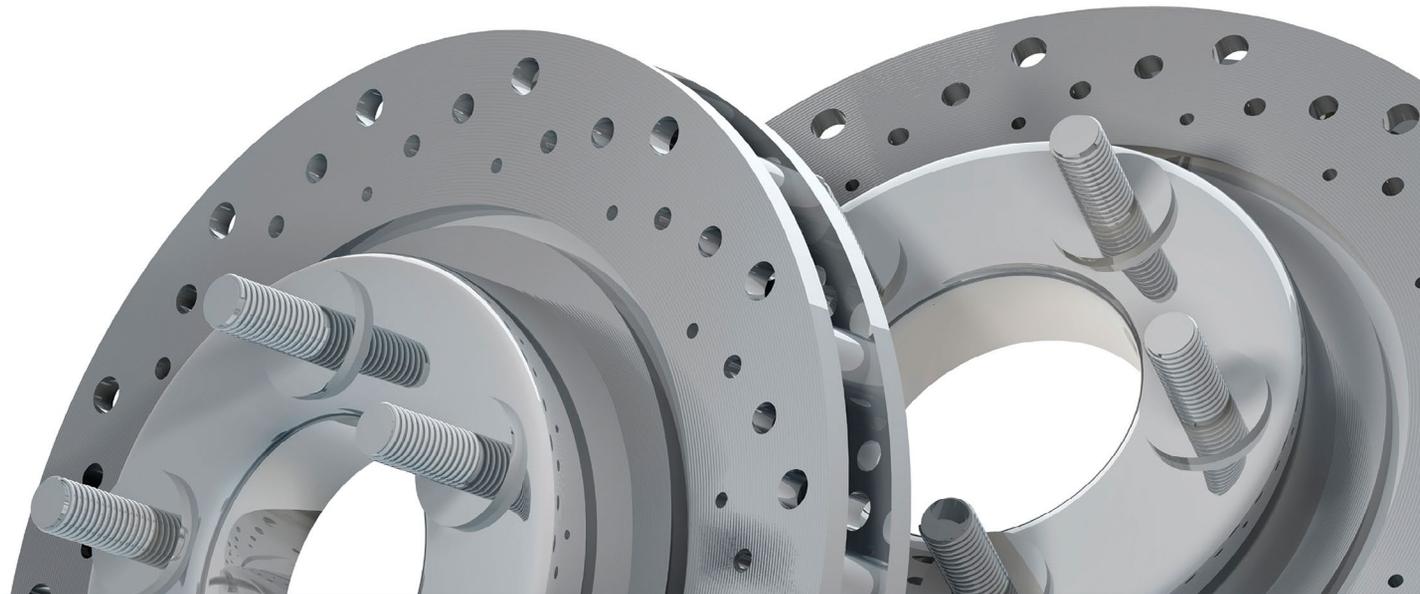
process maps and work instructions offer insight into your organization's business processes and include hundreds of pre-determined best practice processes, work instructions, compliance points and training courses.

The process maps help:

- Document supply chain processes including risk management and contingency plans, enabling employee training for new hires and back-up personnel while ensuring there is no erosion of current knowledge
- Ensure the organization-wide deployment of a consistent supply chain model or template based on industry best practice

QAD's unique set of MMOG/LE tools and solutions help suppliers ensure that required business systems are in place for customer MMOG/LE reviews. QAD's long-tenure of industry participation, expertise in enterprise resource planning, and history of helping suppliers successfully pass customer MMOG/LE audits ensure that our products and services produce results for our customers.

To learn more about QAD's MMOG/LE solutions, please visit www.qad.com/mmogle.



www.qad.com