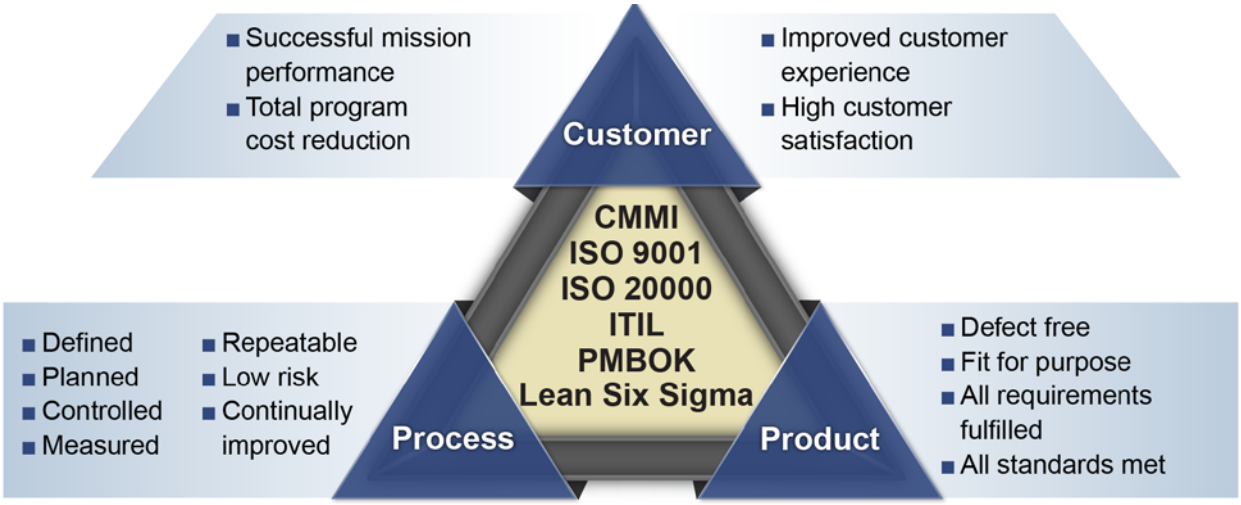
Camber Quality Assurance (QA) Approach

Camber's QA approach brings a tested, systematic methodology, ensuring that our customers receive the highest quality products and services, delivered via efficient and effective processes, by experienced resources dedicated to customer satisfaction. We have a longstanding commitment to best practice standards, accountability through both internal and independent audits, and emphasis on continual improvement. This provides the framework that enables and supports our customers to deliver on their varied missions. Camber has consistently earned CMMI Maturity Level 3 (ML3) ratings and ISO 9001:2008 certifications since 2001. This consistency and discipline supports our ability to deliver superior software and engineering solutions and services that meet or exceed Government standards, with minimal risk. In addition, we have in place a corporate-wide Lean Six Sigma capability to analyze defects, identify bottlenecks, and streamline critical processes as conditions warrant.

Camber maintains and provides a multi-faceted QA approach to manage, monitor, evaluate, measure, and report on the quality of processes, products, and services. Guaranteeing quality for all our customers is a team effort that engages both the corporate and program levels of the organization with customer activities. Bottom line: Camber measures and validates our processes and the outputs of our personnel and suppliers against several widely recognized and accepted standards established for the type of work that we do, as highlighted in **Exhibit 1**.

Exhibit 1. Corporate Quality Commitment. *Customer mission performance can be assured now and into the future by Camber's longstanding commitment to best practice standards.*



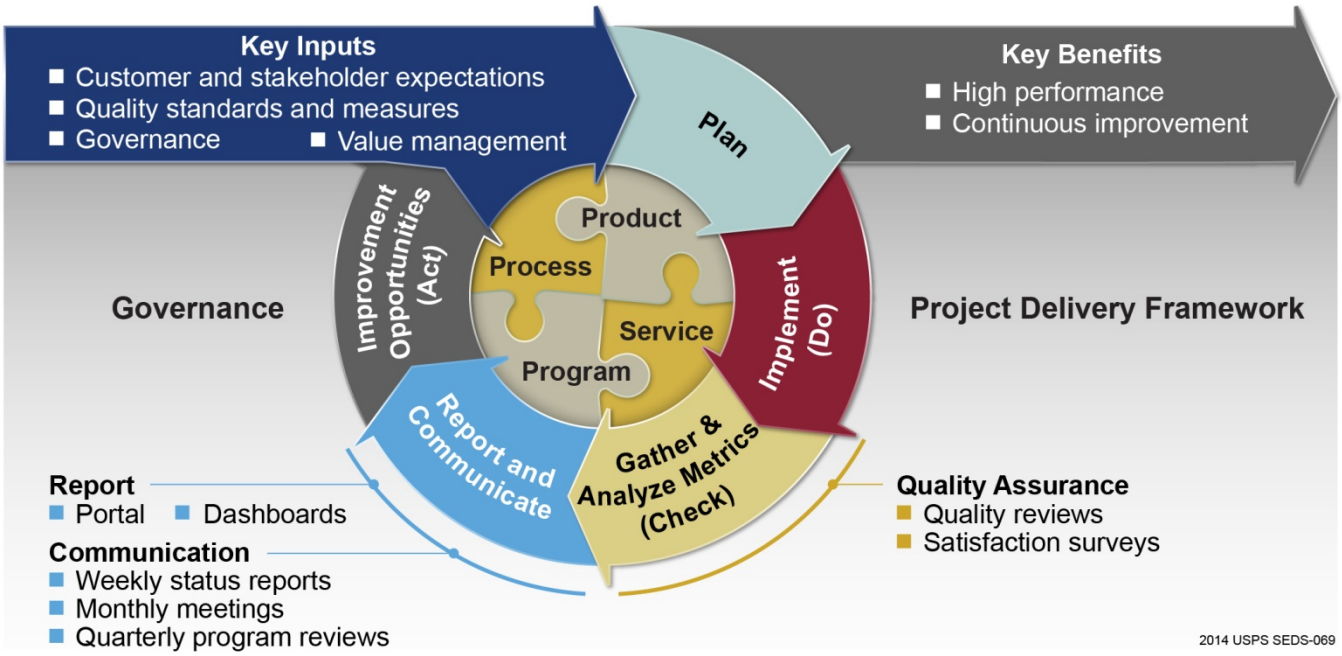
Corporate Commitment

At the highest levels, Camber offers all our customers quality leadership, a commitment to the process approach, and an understanding of the metrics that support a dynamic environment of high performance and continuous improvement. Camber's Quality Management System (QMS) has been certified ISO 9001:2008 compliant for 14 years. The QMS is guided by Camber corporate policies and procedures focused on understanding and satisfying customer requirements by ensuring competent, well-trained project resources; clearly documented and controlled processes and records; systematic measurement and analysis of results; value-added management oversight; and comprehensive internal audits. Following the ISO hallmark Plan, Do, Check, Act (PDCA) formula shown in **Exhibit 2** implementation (plan, do) is always followed by evaluation and identification of changes and corrective actions (check, act) to create a continuous improvement loop.

Certified ISO 9001 registrars visit Camber sites multiple times a year to verify that the QMS operates according to the requirements of the standard. In the meantime, Camber's quality group conducts dozens of internal audits on various parts of the organization to identify any non-conformances that need to be addressed and track any actions to closure. Semi-annual Management Reviews, with Camber's Executive Council

reporting on the organization's performance adhering to our quality policy, meeting our quality objectives, and implementing our QMS, provide ongoing governance. Corporate leaders are actively involved in solving resource and performance issues and utilize every opportunity to enhance Camber's customer relations and satisfaction. All Camber task leads are trained on QMS expectations.

Exhibit 2. Continuous Improvement Focus. *Our Plan-Do-Check-Act approach enables us to continuously improve product and service quality, resulting in lower life cycle costs, fewer delivered defects, and lower risk for customers.*



Camber is also dedicated to CMMI, another standard that defines requirements for software development, system engineering and service delivery best practices. We have repeatedly proven that we conduct best practice requirements development, software engineering, project management, and quality assurance activities. We have continuously earned ML 3 ratings since 2001, the most recent granted in March 2013 for the Camber Software and Network Engineering Business Unit (formerly Avaya Gov ITPS).

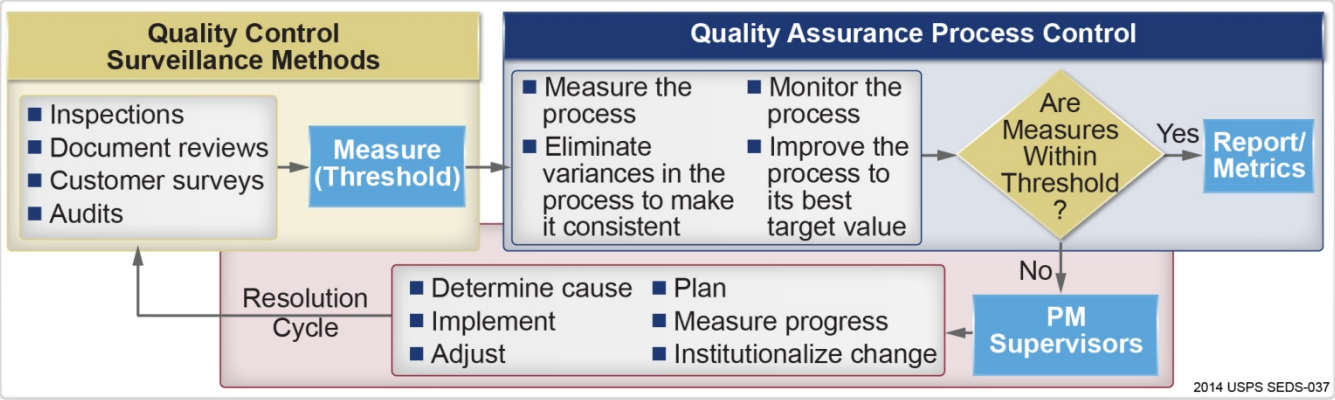
Additionally, the Camber Quality Group internally audits all Camber projects each year to ensure we have in place the appropriate planning, execution, and monitoring, and produce the desired results. Senior management is briefed regularly on these activities.

CMMI reaches more specifically into the project day-to-day project activities, demonstrated in **Exhibit 3** and described below:

- Solution, Maintenance, and Enhancement Development: Requirements Definition, Design, and Development processes comply with CMMI and ISO standards to create high quality systems and services.
- Project Management: Well-managed projects are carefully estimated, planned, monitored, and controlled. Project requirements and work products are objectively reviewed against established standards and are under strict change and configuration management. Dynamic risk management enables proactive, rather than reactive, behavior that effectively mitigates events that could adversely impact program goals. Collaboration, communication and lessons learned facilitate problem solving.
- Work Product and Process Evaluations: The goals are early defect removal and prevention throughout each project phase. Procedures are in place for formal peer reviews that guarantee requirements and development work products meet customer quality standards. Process audits are conducted at critical points to ensure that we follow best practice procedures to develop the solution that satisfies all customer requirements. Metrics collected from reviews and audits determine how efficiently we work, providing data that can be acted upon to improve work processes, products, and services that benefit our customers.

- Comprehensive Testing: As required for the specific project, detailed system integration test planning, execution, daily defect reporting, and analysis are conducted to reach customer acceptance, on time.

Exhibit 3. Quality Management System Processes. *Our use of multiple methods of work product and process reviews provides solid process control and identifies areas needing adjustments to ensure the highest quality work product and most efficient performance.*



Camber also recently completed its initiative to achieve corporate-wide ISO 20000:2011 certification. In 2014, Camber built an ISO 20000 compliant Service Management System, underwent official registrar audits in March 2014 and March 2015, and earned recommendation for certification. An ISO 20000 certificate is the official recognition that an organization has established a framework and systematic approach to implementing the processes defined in the ITIL. The result is the consistent design, transition, and delivery of IT services to the user community, along with a structured focus on continual improvement of these services to fulfill customer requirements. This certification ensures that we become more efficient and effective at managing and delivering the IT services that enable the business functions needed to deliver a wide range of products and services to our customers. Adherence to service management policies, performance against objectives and SLAs, as well as other metrics on incident management, customer satisfaction, and change management activities, have been folded into the standing semi-annual Management Reviews already in place for ISO 9001 reporting.

As part of our commitment to continuously improve our products, services, business performance, and efficiency, Camber has aggressively identified and streamlined many critical customer facing processes using the Lean Six Sigma (LSS) methodology. Six Sigma practitioners are deployed throughout the organization to coordinate cross-functional Kaizen events to improve the processes we use to deliver results to our customers. As one of several Lean tools designed to achieve rapid process improvement, Kaizen events work to simplify processes to eliminate waste, including waiting and rework, thereby reducing costs. Our customers depend on us to provide “best-in-class service,” and our teams work hard every day to provide that by executing solutions and making improvements for ourselves and for our customers.

Customer Satisfaction

We plan and execute all projects and task orders in accordance with the appropriate processes, reinforce them with Camber’s ISO 9001 and CMMI foundational practices, and direct all towards the end goal of customer satisfaction. Camber has a highly effective customer satisfaction methodology that rates our contracts at least annually, based on customer surveys for quality, timeliness, cost control, business practices, and overall satisfaction. Camber also recognizes that the best measurement of customer satisfaction is ongoing communication between our project managers and the customers in a collaborative dialogue that benefits all parties. Toward that end, we require our senior executives and project managers to conduct and report results of semi-annual face-to-face discussions with their customers into our customer satisfaction portal. Our business unit general managers monitor this activity to ensure compliance and to identify any areas of concern for follow-up. Corporate policy dictates that we take immediate action on

any customer comments or ratings expressing dissatisfaction with our work or our personnel. **Exhibit 4** itemizes the critical components of Camber's effective, field proven project quality assurance approach that consistently leads to high levels of customer satisfaction.

Exhibit 4. Quality Hand-in-Hand with Customer Satisfaction. *Camber's customer satisfaction methodology is based on a best-practices approach that ensures quality across plans, resources, work products, and processes.*

Steps to Support High Customer Satisfaction
▪ **Work Breakdown Structure and Project Plan:** Address all stated customer needs, technical/quality requirements and constraints; assign qualified resources to peer reviews, code reviews, and testing.
▪ **Implement:** Execute according to plan; deliver excellent solutions and services based upon customer requirements; manage personnel and monitor quality of their output; participate in Camber internal audits to ensure compliance to established process methodology.
▪ **Gather and Analyze:** Collect quality measures and use metrics and lessons learned to prevent issues and improve project practices.
▪ **Report:** Use daily communication and regularly scheduled status reports to keep customer and all team members (including Camber senior management) informed of progress and issues; ensure all corrective actions are tracked to closure.
▪ **Communicate:** Involve all program employees in continuous improvement of quality processes/procedures, including the identification and mitigation of risks related to quality; include all suppliers and subcontractors in the quality process.
▪ **Identify opportunities to improve:** Obtain customer feedback and use this information, in conjunction with quality metrics, to continually improve customer satisfaction.

Quality Processes

Our understanding of key quality issues enables us to proactively make quality a priority at the beginning of each stage of the life cycle. Camber employs an array of processes to ensure we plan and deliver quality for each and every work product and service. We have employed and fine-tuned these processes for more than 24 years on hundreds of projects. Individual project QA plans define the specific tools we use. QA plans undergo a stakeholder review to verify they are complete, accurate, and appropriate for each task. We modify and update plans, as needed, so they always reflect the current state of the project.

We integrate quality on customer tasks into all technical and management processes through a coordinated program of product evaluations and process audits. Our well-defined and automated evaluation, monitoring, and reporting system provides ongoing visibility into the progress of activities and the quality of process outputs. Camber's independent CMMI, ISO 9001, and Six Sigma trained QA evaluators ensure all process reviews are complete, accurate, and objective. **Exhibit 5** outlines the key tools and techniques we employ today for our customers.

Exhibit 5. Quality Management Tools and Techniques. *Customers are assured of receiving outstanding product and service quality through Camber's comprehensive use of Quality Management tools and techniques.*

Tool	Application	Customer Benefits
Peer Review (formal and informal)	▪ Disciplined review focused on the technical accuracy of the work product (document or code) to meet its intended objectives ▪ Qualified SMEs employed for the review ▪ Objective evaluation criteria defined ▪ Scheduled reviews to allow ample time for review ▪ Well-coordinated peer review meetings with right attendees ▪ Descriptive identification and categorization of defects ▪ Methodical action item tracking and reporting	▪ Camber's best practice processes result in early detection of defects when they are less expensive to fix. ▪ High work product quality facilitates coordination and handoffs among development, CAT, and test teams. ▪ Peer reviews are applied at many interim checkpoints during the project to allow early warning of potential slippages and adverse quality trends.
Process Audits	▪ Plans for critical processes are in place, execution is according to plan, and results are as expected.	▪ Strict adherence to standardized best practices is enforced to consistently deliver

Tool	Application	Customer Benefits
(Inspections)	▪ Detailed checklists are created and tailored to verify staff completes specific activities of a given process. ▪ Verification that planning, engineering, implementation, evaluation, and reporting are compliant with the contract and project plans. ▪ Interviews verify documentation reflects actual practice and offer opportunity for staff to provide feedback on improvements.	repeatable performance and quality products and services. ▪ Visibility into the accomplishment of each SOW element is provided. ▪ Objective information on project performance across various functional areas is available.
Corrective and Preventive Action	▪ Actions are documented in quality group databases and Harrington Quality Management System (HQMS) tool. ▪ Tools facilitate capture, categorization assignment, analysis, and tracking of actions. ▪ Root cause analysis is applied to systemic issues. ▪ Corrective actions are verified for effectiveness before closure. ▪ Preventive actions are identified to head off potential issues. ▪ Frequently scheduled management review of audit metrics and corrective action progress. ▪ Analysis conducted to detect trends.	▪ Process deficiencies are identified and corrected to enable improved compliance, effectiveness, and efficiency. ▪ Predictive analysis allows the team to be more proactive.
Verification Testing	▪ Create test plan and test cases to support testing for all functional requirements in a release. ▪ Ensure all compliance requirements are included. ▪ Conduct peer review of test plan/cases. ▪ Execute tests/maintain RTM. ▪ Provide daily report on issues. ▪ Resolve issues before CAT Readiness Review.	▪ Facilitates detection and correction of anomalies, delivery of defect free software, and adherence to schedule. ▪ Ensures broader coverage of requirements during testing phase.
Lessons Learned	▪ Evaluate what went well and what did not go well after each release. ▪ Checklist used to ensure coverage of all critical areas. ▪ Staff is afforded the opportunity to provide feedback in their area of expertise. ▪ Review previous lessons learned before each release and make necessary adjustments.	▪ Customers capitalize on the successful practices and avoid the bad ones. ▪ Team dynamics are improved as staff has a voice. ▪ Performance is optimized going forward.
Metrics Management	▪ Analysis of peer review, audit, and testing defects identifies trends and areas for process improvement. ▪ Camber Lean Six Sigma resources can be deployed to identify short-term corrective action and long-term strategy for resolving process bottlenecks, increasing efficiency, and reducing cost. ▪ Senior management is actively engaged through regularly scheduled ISO 9001 and CMMI reporting and reviews.	▪ Solid metrics infrastructure supports performance excellence across organizations. ▪ Customers can count on processes that are stable, carefully measured for performance outside the norm, and adjusted as necessary to meet goals. ▪ Process control and predictability allow us to be proactive in resolving problems, rather than waiting for a negative impact to occur.
Personnel Staff Quality Management	▪ Full life cycle recruiting process employs full-time recruiters to hire top talent. ▪ Robust training and retention programs retain top talent. ▪ Staff is trained on, evaluated against, and held accountable to QMS requirements and all relevant processes; requirements flow down to suppliers. ▪ Corrective actions identifying personnel remediation or training necessary are handled immediately in	▪ Strategic needs and technical requirements are addressed. ▪ Customers can depend on consistent quality output

Tool	Application	Customer Benefits
	accordance with Camber HR procedures.	

Quality Organization, Roles and Responsibilities

Camber's structured QA approach provides a definitive QA responsibility, accountability, and an independent reporting tool to top management. Our independent corporate QA Manager, Marguerite Shapalis, provides policy guidance, practices, and procedures meeting CMMI Level 3 and ISO 9001 certification standards to the respective project managers for each project. The Project Manager is responsible for the program implementation, metrics reporting, and establishing and monitoring corrective actions. **Exhibit 6** provides a brief description of our leadership team's QA roles and responsibilities.

Exhibit 6. Quality Roles and Responsibilities. *Quality is embedded into every aspect of our customer support.*

Role(s)	Responsibility
Program/ Project Manager(s)	▪ Coordinates quality reviews with QA Manager; reports on improvement opportunities. ▪ Oversees quality assessments and makes necessary adjustments to provide a 100% QA score. ▪ Develops plan to mitigate recurrence of issues and risks.
Corporate QA Manager	▪ Monitors and maintains quality management documentation. ▪ Schedules and coordinates quality audits. ▪ Manages the follow-up and closure of non-compliance issues. ▪ Reports to project leadership on quality audit findings. ▪ Provides external project perspective; performs oversight activities. ▪ Reviews upcoming project activities to provide insight on continuing efforts to build quality into the project work efforts.
Team Lead(s)	▪ Adheres to the deliverable acceptance criteria and functional criteria, including project guidelines and standards. ▪ Participates in quality activities, including process and deliverable reviews. ▪ Proactively monitors and resolves quality issues.

Quality Surveillance

Camber continually monitors and measures performance. We use a variety of mechanisms to collect the information that tells us if we are doing a good job and how we could do a better job for our customers. We evaluate customer satisfaction data collected in independent surveys and face-to-face meetings for action and improvements. We carry out independent ISO and CMMI audits and follow-up activities in accordance with documented procedures that verify the effective implementation of the QMS and identify opportunities for improvement. A vigorous corrective and preventive action program is in place using HQMS, a world-class tool for enterprise process improvement, compliance, and quality management. Camber internal audits maintain a consistent level of oversight and visibility into the day-to-day project activities. All surveillance measures are focused on ensuring the timely resolution and future prevention of deficiencies in product, process, and services for our customers.

Summary

In summary, Camber brings the necessary QA methods and discipline to all our customers that ensure the stability, reliability, and solid performance of projects. Over the years, our QMS has helped many Government agencies and suppliers mature their personnel, process, and technology assets to improve long-term contract performance. The ability of our customers to fulfill their missions will be enhanced by integrating Camber QA methods focused on:

- Total customer satisfaction and improving the customer experience
- Consistent performance-based quality services that reduce total program costs
- Transparency and accountability in management
- Continuous improvement to meet evolving business needs