Implementing an AS 9100
Quality Management System – A Road Map

Implementation of AS9100 will affect the entire organization. Done correctly, it will result in a 'cultural transition' which supports an atmosphere of continuous improvement. Done wrong, at best it is just a waste of time and money. Done really wrong, it is not only a waste of time and money it will frustrate and disengage your best employees.

The effort required in implementing AS9100 depends on:

- The sophistication of your existing quality program. For many organizations, AS9100 is their first experience with a quality management system, so all the concepts are new and they are starting from the beginning.
- The size of your organization. Implementing a QMS at a large company will take proportionally more work than a small company.
- The complexity of your process. Making simple products will require a different approach to a quality management system than making semiconductors or pharmaceuticals. Likewise, simple service companies will have a different approach than organizations offering complex services (i.e. a hospital).

Step 1: Top Management Commitment

For an AS9100 implementation to be successful long term, top management must demonstrate a commitment to the implementation. Without the commitment of top management no quality initiative will succeed for any length of time. The standard requires management commitment, and like or not, an external auditor with any experience will be able to tell whether to management is committed or not.

Top management should provide evidence of its commitment to the development and implementation of the quality management system. The standard lists numerous ways for senior management to demonstrate commitment. Among those ways:

- Defining the organization's quality policy and ensuring every employee understands the quality policy and why it matters,
- Ensuring that quality objectives are established and making sure that employees understand how they can help make sure those objectives are achieved,
- Ensuring the availability of resources required for the quality management system,
- Appointing and supporting a management representative to coordinate quality management system activities, and
- Conducting management reviews that are effective.
AS9100C Implementation Road Map

Step 2 Hold Management Orientation

The leadership team needs to understand the basics of what AS9100 requires, so training is required. This is a good time to start thinking about the quality policy and the quality objectives. Top management must ensure the entire leadership is on board.

Step 3 Establish Implementation Team and Select Management Rep

The first phase of implementation calls for the commitment of top management - the CEO and perhaps a handful of other key people. After they have been trained, the next step is to establish implementation team and appoint a Management Representative (MR) as its coordinator to plan and oversee implementation.

In the context of the standard, the MR is the person within the Organization who acts as interface between organization management and the AS9100 registrar. Their role is, in fact, much broader than that. The MR should also act as the organization’s "quality management system champion," and must be a person with:

- Total backing from the CEO,
- Genuine and passionate commitment to quality in general and the AS9100 quality management system in particular,
- The ability - resulting from rank, seniority, or both - to influence managers and others of all levels and functions,
- Detailed knowledge of quality methods in general and AS9100 in particular.

It is important to understand that the position of management representative continues beyond registration. It is an ongoing position, required by the standard to ensure that the QMS remains effective. It is not a window dressing position.

AS9100 is a process based standard, so early on it is important to identify the process owners for each process of the organization. This is the person who can make changes in process and who is ultimately responsible for that process. It is typically department managers, but not always.

Step 4 Begin Registrar Selection Process

Too many organizations view registrars as a commodity item and do not take enough time selecting their registrar. To start with, all registrars are not alike. Decide early on, do you want the Nordstrom’s of registrars? Or maybe the Target, the WalMart, or for some companies, the 99 Cent Store of registrars? Most companies will have customers who want a copy of their certificate, and those customers will look to see who your registrar is.

From the top to the bottom of the list, there is a big difference in response, in helpfulness and in how that registrar is perceived by the rest of the ISO world. The registrars can be roughly divided into three groups: the top one fourth, the middle one half and the bottom
quarter. Decide which group you would like your registrar to come from. You will be working with the registrar for three years or more. If you don’t like them early on, it will be expensive to switch. It is easiest to switch every three years, which is how long a certificate is good for.

Ask your customers and suppliers who are registered what they like and don’t like about their registrar. This is an important step and needs to be given the time it deserves. It is not unusual for this step to take 90 days or more, so it is better to get started on this soon.

Refer back to our website for a list of ANAB approved AS9100 registrars.

Step 5 Develop Preliminary Time Table for Implementation

Implementation times for AS9100 can take as little as six months to over a year. An important consideration is that your quality management system must be in place for at least 45 days prior to the registration audit. You cannot be finishing your system the day before the auditor shows up.

You need to be realistic about the internal resource you can make available to the implementation. If everybody is already busy and no one can dedicate more than a few hours a month to ISO, then four months is out of the question, and you need to be thinking about taking a year for your implementation. While it is possible to hire a consultant to do most of the work for you and many companies take this approach, we don’t recommend doing this way. Your AS9100 system needs to be YOUR system, not someone else’s. There are times that getting an outsider to do most of the work cannot be avoided, but please understand that in the long run those systems tend to fail much more often than the systems where employees are actively involved in creating the system.

Step 6 Provide training

When implementing an AS9100 based quality management system, there are two categories of training to be addressed: first, is training about AS9100, and second, is training related to ensuring that employees are competent to do their job (see clause 6.2.2).

Training related to the standard - Since the quality management system affects all the areas and all personnel in the organization, training programs should be structured for different categories of employees - senior managers, middle-level managers, supervisors and workers. The implementation plan should make provision for this training.

The training should cover the basic concepts of quality management systems and the standard and their overall impact on the strategic goals of the organization, the changed processes, and the likely work culture implications of the system. In addition, initial training may also be necessary on writing quality manuals, procedures and work instruction; auditing principles; techniques of laboratory management; calibration; testing procedures, etc.
Training related to employee competence – part of the process of implementing AS9100 is to determine what “competent” looks like for all positions in the company. Comparing what competent is, to those doing the various jobs almost always results a list of short comings and therefore training needs, which need to be addressed.

Step 8 Conduct Status Survey

AS9100C has 188 “shall” statements (166 if design/development is excluded). At the time of the registration audit, there is an expectation that all of those “shall”s have been addressed. Note: if your organization is already ISO 9001 registered, you still have an additional 52 requirements to address.

The goal of AS9100 is to create a quality management system that conforms to the standard. This does not mean that you cannot incorporate, adapt, or add onto quality programs already in place. So the next step in the implementation process is to compare the organization’s existing quality management system, if there is one -- with the requirements of the standard (AS9100C).

For this purpose, an organization flow chart showing how information and product actually flows (not what should be done) from order placement by the customer to delivery to this customer should be drawn up. From this over-all flow chart, a flow chart of activities in each department should be prepared. This flowchart will also be useful later, since the standard requires you to describe the sequence and interaction of your processes, and flowcharts are one way to do that.

With the aid of the flow charts, a record of existing quality management system should be established. Written procedures may already be in place. Unless they are very much out of date, these documents should not be discarded. Rather, they should be incorporated into the new quality management system.

The basic approach is to determine and record how a process is currently carried out. We can do this by identifying the people involved and obtaining information from them during individual interviews. Unfortunately, it often happens that different people will give different, contradicting versions of a process. Each one may refer to oral instructions that are not accurate or clear. This is why the facts are often not described correctly the first time around, and have to be revised several times.

Once it has been agreed how to describe the current process, the process has to be adapted, and implemented according to the requirements of the quality standard (AS9100C). This requires organizational arrangements, the drawing up of additional documents and possible removal of existing documentation and records. In introducing a quality management system, the emphasis is on the improvement of the existing processes or the re-organization of processes.
Step 9 Create Documented Implementation Plan

Once the organization has obtained a clear picture of how its quality management system compares with the AS9100C standard, all non-conformances must be addressed with a documented implementation plan. Usually, the plan calls for identifying and describing processes to make the organization’s quality management system fully in compliance with the standard.

The implementation plan should be thorough and specific, detailing:

- Quality documentation to be developed
- Objective of the system
- Pertinent AS9100 section
- Person or team responsible
- Approval required
- Training required
- Resources required
- Estimated completion date

These elements should be organized into a detailed chart, to be reviewed and approved. The plan should define the responsibilities of different departments and personnel and set target dates for the completion of activities. Once approved, the Management Representative should control, review and update the plan as the implementation process proceeds.

Step 10 Create QMS Documentation

Documentation is the most common area of non-conformance among organizations wishing to implement an AS9100 quality management systems. The trick is to figure out what kind of level of documentation would be beneficial to the organization. There are far too many “AS/ISO” organizations that created a documentation mess. They created documents that are not used or do not reflect what is being done, or both. Don’t do that.

Documentation of the quality management system should include:
- Documented statements of a quality policy and quality objectives,
- A quality manual,
- Documented procedures and records required by the standard AS9100:2008, and
- Documents needed by the organization to ensure the effective planning, operation and control of its processes.

Quality documentation is generally prepared in the three levels as follows.

**Level A: Quality manual**

**Level B: Quality management system procedures**
Level C: Quality documents (forms, reports, work instructions, etc.)

Step 11 Document Control

Once the necessary quality management system documentation has been generated, a documented system must be created to control it. Control is simply a means of managing the creation, approval, distribution, revision, storage, and disposal of the various types of documentation. Document control systems should be as simple and as easy to operate as possible -- sufficient to meet AS9100 requirements and that is all. More and more companies are moving towards an all electronic version of their QMS. This means no documents to distribute and maintain. Remember, employees do need to have access to relevant QMS documents.

The principle of AS9100 document control is that employees should have access to the documentation and records needed to fulfil their responsibilities.

Step 12. Start AS9100 Awareness Programs

AS9100 awareness programs should be conducted to communicate to the employees the aim of the quality management system; the advantage it offers to employees, customers and the organization; how it will work; and their roles and responsibilities within the system. Suppliers of materials and components should also participate in these programs.

The awareness program should emphasize the benefits that the organization expects to realize through its quality management system. The program should also stress the higher levels of participation and self-direction that the quality management system renders to employees. Such a focus will go far to enlist employee support and commitment.

Step 13. Implementation

It is good practice to implement the quality management system being documented as the documentation is developed, although this may be more effective in larger firms. In smaller companies, the quality management system is often implemented all at once throughout the organization. Where phased implementation takes place, the effectiveness of the system in selected areas can be evaluated.

The implementation progress should be monitored to ensure that the quality management system is effective and conforms to the standard. These activities include internal quality audit, formal corrective action and management review.

Step 14. Internal Quality Audit

As the system is being installed, its effectiveness should be checked by regular internal quality audits. Internal quality audits are conducted to verify that the installed quality management system:
• Conform to the planned arrangements, to the requirements of the standard (AS9100) and to the quality management system requirements established by your organization, and
• Is effectively implemented and maintained.

Even after the system stabilizes and starts functioning, internal audits must be planned and performed on an ongoing basis.

A few staff members should be trained to carry out internal auditing. Use ISO 19011 for guidance in auditing, auditor qualification and programs. The vast majority of organizations choose to outsource the training of their internal auditors.

Step 15. Management Review

When the installed quality management system has been operating for a few months, a complete internal audit of the quality management system and a management review should be conducted. Corrective actions implemented.

The review should include assessing opportunities for improvement and the need for changes to the quality management system, including the quality policy and quality objectives.

Step 16. Pre-assessment Audit

Most certification bodies provide this service for a nominal charge. The pre-assessment audit would provide a degree of confidence for formally going ahead with an application for certification. A pre-assessment audit is highly recommended.

Step 17. Certification and Registration

When a pre-assessment audit is done, the certification audit is usually scheduled for 4-6 weeks after the pre-assessment audit, in order to have time to address the deficiencies found in the pre-assessment audit. In those situations where the pre-assessment shows major deficiencies, it might be wise to allow more time to work on the system.

If the certification body finds the system to be working satisfactorily, it awards the organization a certificate, generally for a period of three years. During this three-year period, it will carry out periodic surveillance audits to ensure that the system is continuing to operate satisfactorily.

Step 18: Continual Improvement

Certification to AS9100 can not be the end. You need to continually seek to improve the effectiveness and suitability of the quality management system through the use of:
• Your quality policy
Your quality objectives
Audit results, both internal and external
Analysis of data
Corrective and preventive actions
Management review

ISO 9004:2000 provides a methodology for continual improvement.

We can help you with any part of your AS9100 implementation, or we can assist you start to finish. We can provide all training onsite or by webinar so participants can be in multiple locations, they will just need a computer and access to a high speed internet connection.

We have a process for working with clients remotely so we do not have to come to your location (we think it’s better if we can, but it’s not a necessity.)

If you have questions, email us at roger@systemsquality.com.