



QUALITY MANAGEMENT SYSTEMS – Requirements for Aviation, Space and Defense Organizations (AS9100)

James (Jim) Thompson, Principal
Thompson & Associates.
Quality Assurance Consulting and Training
1-603-528-2283
jthompson@metrocast.net



THE PRESENTATION CONTENT

- 1) HISTORY OF QUALITY SYSTEMS
- 2) THE ROAD TO ISO
- 3) COMMON ISO STANDARDS
- 4) AS9100 CONTENT
- 5) AS9100C SIGNIFICANT CHANGES
- 6) TIME TABLE TO AS9100C TRANSITION
- 7) ACTION PLAN FOR AS9100C TRANSITION
- 8) SUMMARY



HISTORY OF QUALITY SYSTEMS

FROM THE BEGINNING

CRAFTSMEN

INSPECTION

QUALITY CONTROL

ISO & THIRD PARTY REGISTRATION



HISTORY OF QUALITY SYSTEMS

CRAFTSMEN: QUALITY AND SERVICE BASED ON
OWNER/INDIVIDUAL.

IF THERE WAS A PROBLEM, LOCAL ORGANIZATION/PERSON,
TO GO TO.



HISTORY OF QUALITY SYSTEMS

INSPECTION: (INSPECTOR, CHIEF INSPECTOR)

INDUSTRIAL REVOLUTION, DIVISION OF LABOR, MFG OPERATIONS REPETITIVE,

PRODUCT MUST BE INSPECTED BY SOMEONE, INSPECTION MOVED TO THE END OF THE LINE...PRIMARILY.

IDEAS FOR SYSTEMS THEN: GREEN TAGS, RED TAGS, REWORK TAGS, REWORK REVIEW ETC. CALIBRATION OF MEASURING INSTRUMENTS.



HISTORY OF QUALITY SYSTEMS

QUALITY CONTROL:

REALIZATION THAT QUALITY IS ACHIEVED BY A PROCESS, NOT 100% INSPECTION AT THE END OF THE LINE.

SAMPLING PLANS, CONTROL CHARTS AND PROCESS CONTROL TECHNIQUES DEVELOPED, QUALITY ENGINEERING, RELIABILITY ENGINEERING ORIGINATED.

THE US MILITARY BEGAN TO REALIZE THAT INSPECTION ALONE WAS NOT SUFFICIENT, WORK BEGAN ON QUALITY SYSTEMS, MOST LIKELY DURING WWII AND IMMEDIATELY THEREAFTER.

MIL-I-45208A AND MIL-Q-9858A ISSUED 1963!



HISTORY OF QUALITY SYSTEMS

IDEAS IN MIL-I-45208A: INSPECTION SYSTEM
REQUIREMENTS.(1963)

CONTRACTOR RESPONSIBILITIES
INSPECTION, TESTING DOCUMENTATION.
RECORDS
CORRECTIVE ACTION
DRAWING AND CHANGE CONTROL
MEASURING AND TEST EQUIPMENT.
PROCESS CONTROLS
INDICATION OF INSPECTION STATUS.
GOVERNMENT FURNISHED MATERIAL
NON-CONFORMING MATERIAL
QUALIFIED PRODUCTS
SAMPLING INSPECTION
GOVERNMENT INSPECTION

Total = 13



HISTORY OF QUALITY SYSTEMS

IDEAS IN MIL-Q-9858A: QUALITY PROGRAM REQUIREMENTS.(1963)

ORGANIZATION

INITIAL QUALITY PLANNING

WORK INSTRUCTIONS

RECORDS

CORRECTIVE ACTION

COSTS RELATED TO QUALITY.

DRAWINGS, DOCUMENTATION CHANGES

MEASURING AND TESTING EQUIPMENT.

PRODUCTION TOOLING AS MEDIA FOR
INSPECTION.

USE OF CONTRACTOR'S INSPECTION EQUIPMENT.

ADVANCED METROLOGY REQUIREMENTS.

Total = 12



HISTORY OF QUALITY SYSTEMS

IDEAS IN MIL-Q-9858A: QUALITY PROGRAM REQUIREMENTS.
(1963)

CONTROL OF PURCHASES

PURCHASING DATA

MATERIALS, & MATERIAL CONTROL

PRODUCTION PROCESSING AND
FABRICATION.

COMPLETED ITEM INSPECTION AND TEST.

NON-CONFORMING MATERIAL

STATISTICAL QUALITY CONTROL.

INDICATION OF INSPECTION STATUS.

GOVERNMENT INSPECTION

GOVERNMENT PROPERTY

Total = 12 + 10 = 22



HISTORY OF QUALITY SYSTEMS

MISSING FROM BOTH MIL-I AND MIL-Q:

INTERNAL AUDITING
TRAINING
SERVICE SUPPORT
DESIGN CONTROL



HISTORY OF QUALITY SYSTEMS

THE IDEAS IN MIL-I-45208 AND MIL-Q-9858A

WERE PICKED UP IN EUROPE IN 50'S & 60'S, 70'S

INTERNATIONAL TRADE HIGHLIGHTED QUALITY PROBLEMS
WORLDWIDE.



HISTORY OF QUALITY SYSTEMS

IN THE 50'S, 60', 70'S AND EARLY 80'S. QUALITY ISSUES CAME TO THE WORLD STAGE.

AS EUROPE DEVELOPED THEIR OWN DOCUMENTATION THE INTERNATIONAL COMMUNITY, WORLD WIDE, LED BY THE INTERNATIONAL ORGANIZATION FOR STANDARDIZATION,

(IOS) GENEVA, SWITZERLAND. CAME TO THE CONCLUSION

THAT INTERNATIONAL COORDINATION TO DEVELOP QUALITY SYTEMS WAS APPROPRIATE.



HISTORY OF QUALITY SYSTEMS

A TECHNICAL COMMITTEE, WITH

VARIOUS SUB-COMMITTEES, CAME INTO BEING. LED BY IOS.



HISTORY OF QUALITY SYSTEMS

FROM THE TECHNICAL COMMITTEE
IDEAS!

COMMON QMS STANDARDS

THIRD PARTY REGISTRATION



HISTORY OF QUALITY SYSTEMS

DURING THIS PERIOD, INDUSTRY WORLDWIDE HAD THEIR OWN INDIVIDUAL DOCUMENTS.

BOEING, GE, HAD THEIR OWN

SOME AEROSPACE, AND MILITARY CONTRACTORS USED MIL-I AND MIL-Q.

EUROPEAN COUNTRIES, UK HAD THEIR OWN, WHICH WERE BASED IN MILI, MIL Q,

THE US AUTOMOTIVE INDUSTRY (FORD, GM, CHRYSLER) HAD OWN.

MEDICAL DEVICES USED GMP AND FDA REGULATIONS.



HISTORY OF QUALITY SYSTEMS

AMERICAN SOCIETY FOR QUALITY CONTROL (ASQC)
AND AMERICAN NATIONAL STANDARDS INSTITUTE
(ANSI) WERE BROUGHT INTO THE LOOP BY IOS.

AT ASQ MEETINGS WE STARTED HEARING ABOUT ISO
QUALITY MANAGEMENT SYSTEMS WERE COMING.

IN THE EARLY 80'S IT WAS A BIG TOP OF DISCUSSION
AND MUCH PUBLISHED ABOUT THE IDEA.



HISTORY OF QUALITY SYSTEMS

1987: ANSI/ASQC ISSUED 5 DOCUMENTS: (STANDARDS)

- 1) ANSI/ASQC Q90-1987 QUALITY MANAGEMENT AND QUALITY ASSURANCE STANDARDS-GUIDELINES FOR SELECTION AND USE.
- 2) ANSI/ASQC Q91-1987 QUALITY SYSTEMS –MODEL FOR QUALITY ASSURANCE IN DESIGN/DEVELOPMENT, PRODUCTION, INSTALLATION AND SERVICING. (20 SECTIONS)
- 3) ANSI/ASQC Q92-1987 QUALITY SYSTEMS – MODEL FORQUALITY ASSURANCE IN PRODUCTION AND INSTALLATION. (18 SECTIONS)
- 4) ANSI/ASQC Q93-1987 QUALITY SYSTEMS – MODEL FOR QUALITY ASSURANCE IN FINAL INSPECTION AND TEST. (12 SECTIONS)
- 5) ANSI/ASQC Q94-1987 QUALITY MANAGEMENT AND QUALITY SYSTEM ELEMENTS – GUIDELINES.



HISTORY OF QUALITY SYSTEMS

THE 3 MAIN STANDARDS, Q91, Q92 AND Q93 WERE TO SUPPORT

A) DESIGN COMPANIES, B) NON-DESIGN COMPANIES,
C) WAREHOUSES.

Q91 WAS THE MAIN DOCUMENT: (20 ELEMENTS)

- | | |
|---|-----------------------------------|
| 4.1 MANAGEMENT RESPONSIBILITY | 4.11 INSPECTION, MEASURING & TE |
| 4.2 QUALITY SYSTEM | 4.12 INSPECTION & TEST STATUS |
| 4.3 CONTRACT REVIEW | 4.13 CONTROL OF NON-CONF PRODUCT |
| 4.4 DESIGN CONTROL | 4.14 CORRECTIVE ACTION |
| 4.5 DOCUMENT CONTROL | 4.15 HANDLING, STORAGE, PKG. DEL. |
| 4.6 PURCHASING | 4.16 QUALITY RECORDS. |
| 4.7 PURCHASER SUPPLIED PRODUCT | 4.17 INTERNAL QUALITY AUDITS |
| 4.8 PRODUCT IDENTIFICATION
& TRACEABILITY. | 4.18 TRAINING |
| 4.9 PROCESS CONTROL | 4.19 SERVICING |
| 4.10 INSPECTION AND TESTING | 4.20 STATISTICAL TECHNIQUES. |

Q92 (18 ELEMENTS)

Q93 (12 ELEMENTS)



HISTORY OF QUALITY SYSTEMS

THIRD PARTY AUDIT AND REGISTRATION WAS A REQUIREMENT, REGARDLESS OF THE STANDARD USED.

REGISTRATION JUST MEANT ONCE AUDITED AND CERTIFIED, THE COMPANY IS ALSO REGISTERED.

WHOLE SYSTEM WAS VOLUNTARY AND PAID FOR BY THE COMPANY DESIRING REGISTRATION BY THE THIRD PARTY COMPANY.



THE MAIN 5 ISO STANDARDS

CURRENTLY, THE 5 MAIN ISO STANDARDS IN USE TODAY ARE:

- 1) ISO9001:2008 - QMS REQUIREMENTS, APPLIES TO GENERAL BUSINESSES.
- 2) AS9100:2009 – QMS REQUIREMENTS FOR AVIATION, SPACE AND DEFENSE ORGANIZATIONS.
- 3) TS16949:2009 – QMS REQUIREMENTS FOR AUTOMOTIVE INDUSTRY
- 4) ISO13485:2003 – QMS REQUIREMENTS FOR MEDICAL DEVICES.
- 5) ISO14001:2004 - EMS REQUIREMENTS FOR ENVIRONMENTAL



THE BIG 5 ISO STANDARDS

COMMON AMONG ISO

DESIGN CONTROL(WHEN APPLICABLE).

INTERNAL AUDITING

TRAINING

PLAN, DO, CHECK ACT

CONTINUOUS IMPROVEMENT

MANAGEMENT REVIEW

SPECIAL PROCESS CONTROLS

REGULATORY CONTROL/COMPLIANCE

RISK MANAGEMENT

PROJECT MANAGEMENT

CRITICAL ITEM CONTROL

THIRD PARTY REGISTRATION



THE ROAD TO ISO

THIS CONCLUDES THE DISCUSSION OF THE HISTORY AND HOW WE GOT TO ISO, IN GENERAL.

THE BALANCE OF THE PRESENTATION WILL FOCUS ON AS9100, THE AEROSPACE AND DEFENSE STANDARD...IT'S HISTORY AND THE RECENT SIGNIFICANT CHANGES.



THE ROAD TO AS9100

INDUSTRY COMMUNICATED CONCERNS ABOUT WEAKNESSES IN THE ISO9001 STANDARDS IN THE 80'S, EARLY 90'S & AFTER.

THE FIRST AEROSPACE BASIC QUALITY SYSTEM STANDARD

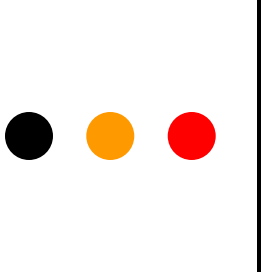
WAS ISSUED IN 1997, AS AS9000, WITH THE SAE.

REVISIONS WERE ISSUED IN 1999, WHEN AS9000

BECAME AS9100A. PLAN, DO, CHECK ACT PHILOSOPHY IN THE STANDARD AND MANAGEMENT REVIEW CAME INTO BEING,

SINCE 2000, WE'VE SEEN AS9100 REV A, REV B AND NOW REV C.

DURING THIS PERIOD, ISO STANDARDS FOR THE OTHER INDUSTRIES EVOLVED ALSO.



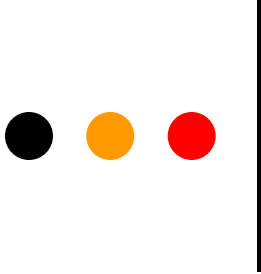
THE ROAD TO AS9100C (Aviation , Space and Defense Organizations)

DURING THIS PERIOD NADCAP CAME INTO BEING..

NATIONAL AEROSPACE, DEFENSE CONTRACTOR ACCREDITATION PROGRAM.

(SPECIAL PROCESS CONTROLS) IS THE FOCUS OF NADCAP.

CREATED 1990 BY SOCIETY OF AUTOMOTIVE ENGINEERS, HEADQUARTERED IN WARRENDALE, PA. REGISTRAR CALLED PERFORMANCE REVIEW INSTITUTE SCHEDULES THE AUDITS. (AEROSPACE & AUTOMOTIVE INDUSTRY EFFORT)



THE ROAD TO AS9100C (Aviation , Space and Defense Organizations)

NADCAP IS AN INDEPENDENT ORGANIZATION THAT AUDITS AND REGISTERS COMPANIES WITH SPECIAL PROCESSES, SUCH AS HEAT TREAT, PLATING, WELDING, ETC.

THE FOCUS IS ON OVER 16 SPECIAL PROCESSES. NADCAP CREATES SPECIFIC DETAILED SPECIFICATIONS FOR EACH.

AUDITORS ARE HIGHLY QUALIFIED AND THOROUGH.



THE ROAD TO AS9100

THE BALANCE OF THE PRESENTATION:

- 1) THE FOLLOWING REMARKS WILL FOCUS ON THE AS9100:2009 STANDARD (AS9100C) QMS REQUIREMENTS FOR AVIATION, SPACE AND DEFENSE ORGANIZATIONS.
- 2) THE SIGNIFICANT CHANGES FROM REV AS9100B TO AS9100C.
- 3) THE DISCUSSIONS **WILL NOT** INCLUDE A *DETAILED* EXPLANATION OF THE CONTENT OR INTERPRETATION OF THE REASONS FOR THE CHANGES.



FORMAT OF AS9100C

THE STANDARD HAS 8 SECTIONS

- 1) FOREWORD
- 2) REVISION SUMMARY
INTRODUCTION
SCOPE
NORMATIVE REFERENCES
- 3) TERMS AND DEFINITIONS
- 4) **QUALITY MANAGEMENT SYSTEM**
- 5) **MANAGEMENT RESPONSIBILITY**
- 6) **RESOURCE MANAGEMENT**
- 7) **PRODUCT REALIZATION**
- 8) **MEASUREMENT, ANALYSIS AND IMPROVEMENT.**



AS9100 SIGNIFICANT CHANGES (B TO C)

ADDITIONS (GENERAL):

AS9100C INCORPORATES ISO 9001:2008 CHANGES. (ALL)

AS9100 SCOPE IS EXTENDED TO INCLUDE **DEFENSE** AS WELL AS AVIATION AND SPACE.

AS9100 INTRODUCES THE TERMS

SPECIAL REQUIREMENTS” (3.2)

CRITICAL ITEMS”. (3.3)

PROJECT MANAGEMENT (7.1.1)

RISK MANAGEMENT (3.1)



AS9100 SIGNIFICANT CHANGES (B TO C)

ADDITIONS- LITTLE MORE SPECIFIC:

AS9100C ENHANCES AND RE-LOCATES “CONFIGURATION MANAGEMENT” (TO 7.1.3 FROM 4.3)

.

AS9100C RELOCATES FIRST ARTICLE INSPECTION (FAI) FROM SECTION 8 (MEASUREMENT) TO SECTION 7.5.1.1 RENAMED IT PRODUCTION PROCESS VERIFICATION).

AS9100C ADDS THE REQUIREMENT TO MEASURE ON TIME DELIVERY TO SECTION 5.2., CUSTOMER FOCUS.



SIGNIFICANT CHANGES AS9100 (B TO C)

SIGNIFICANT ADDITIONS:

- 1) RISK MANAGEMENT (3.1)
- 2) SPECIAL REQUIREMENTS (3.2)
- 3) CRITICAL ITEMS (3.3)
- 4) PROJECT MANAGEMENT (7.1.1)
- 5) SCHEDULE ADHERENCE (5.2)



SIGNIFICANT CHANGES AS9100 (B TO C)

RISK MANAGEMENT: (3.1)

RISK IS AN UNDESIRABLE SITUATION OR CIRCUMSTANCE THAT HAS BOTH A LIKELIHOOD OF OCCURRING AND A POTENTIALLY NEGATIVE CONSEQUENCE.



SIGNIFICANT CHANGES AS9100 (B TO C)

MORE ON RISK MANAGEMENT:

RISK MANAGEMENT IS A VERY BROAD SUBJECT AREA.

THE INSURANCE INDUSTRY FIRST PROMOTED RISK

MANAGEMENT BY INSURING CERTAIN RISKS.

LARGE COMPANIES NOW HAVE RISK MANAGEMENT DEPARTMENTS.

ISO QMS ARE BECOMING BUSINESS MANAGEMENT SYSTEMS

Ref: Managing Business Risk by Peter C. Young, Steven C. Tippins, 2001, AMACOM



SIGNIFICANT CHANGES AS9100 (B TO C)

MORE ON RISK MANAGEMENT.

THE RISK MANAGEMENT PROCESS:

1) ESTABLISH THE CONTEXT:

ENTIRE BUSINESS, OR JUST FOCUS ON QMS
RELATED RISKS?:

- Contracts,
- Obligations,
- Commitments
- Agreements.

(COCA)



SIGNIFICANT CHANGES AS9100 (B TO C)

MORE ON RISK MANAGEMENT. (THE GENERAL PROCESS)

- 1) IDENTIFY RISK.
- 2) ANALYZE RISK/S:
 - LIKLIHOOD OF OCCURRENCE?
 - CONSEQUENCES?
 - LEVEL OF CONSEQUENCE/S?
- 3) EVALUATE RISK/S
 - TREAT OR NOT TO TREAT.
 - TREATMENT OPTIONS
- 4) PREPARE AND IMPLEMENT TREATMENT OPTIONS.



SIGNIFICANT CHANGES AS9100 (B TO C)

MORE ON RISK MANAGEMENT:

YOUR THIRD PARTY AUDITOR WILL BE LOOKING FOR EVIDENCE OF RISK MANAGEMENT.

START WITH A RISK MANAGEMENT PLAN. A PROCEDURE IS RECOMMENDED, OR INTEGRATE THE PROCESS INTO ANOTHER PROCEDURE.

CONSIDER ONLY CONTRACTS, OBBLIGATIONS, COMMITMENTS, AGREEMENTS AS RELATED TO THE CUSTOMER PO'S/CONTRACTUAL AGREEMENTS.

TALK TO YOUR REGISTRAR.



SIGNIFICANT CHANGES AS9100 (B TO C)

MORE ON SIGNIFICANT ADDITIONS:

SPECIAL REQUIREMENTS (3.2):

- 1) THOSE REQUIREMENTS IDENTIFIED BY THE CUSTOMER, OR DETERMINED BY THE ORGANIZATION, WHICH HAVE HIGH RISKS TO BEING ACHIEVED, THUS REQUIRING THEIR INCLUSION IN THE RISK MANAGEMENT PROCESS.

- 2) FACTORS USED IN THE DETERMINATION OF SPECIAL REQUIREMENTS INCLUDE PRODUCT OR PROCESS COMPLEXITY, PAST EXPERIENCE AND PRODUCT OR PROCESS MATURITY.

- 3) EXAMPLES OF SPECIAL REQUIREMENTS INCLUDE PERFORMANCE REQUIREMENTS IMPOSED BY THE CUSTOMER THAT ARE AT THE LIMIT OF THE INDUSTRY'S CAPABILITY, OR REQUIREMENTS DETERMINED BY THE ORGANIZATION TO BE AT THE LIMIT OF ITS TECHNICAL OR PROCESS CAPABILITIES.



SIGNIFICANT CHANGES AS9100 (B TO C)

MORE ON SIGNIFICANT ADDITIONS:

CRITICAL ITEMS (3.3) :

- 1) THOSE ITEMS (E.G. FUNCTIONS, PARTS, SOFTWARE, CHARACTERISTICS, PROCESSES) HAVING SIGNIFICANT EFFECT ON THE PRODUCT REALIZATION AND USE OF THE PRODUCT, INCLUDING SAFETY, PERFORMANCE, FORM, FIT, FUNCTION, PRODUCIBILITY, SERVICE LIFE, ETC THAT REQUIRE SPECIFIC ACTIONS TO ENSURE THEY ARE ADEQUATELY MANAGED.
- 2) EXAMPLES OF CRITICAL ITEMS INCLUDE SAFETY CRITICAL ITEMS, INFRASTRUCTURE CRITICAL ITEMS, MISSION CRITICAL ITEMS, KEY CHARACTERISTICS, ETC.



SIGNIFICANT CHANGES AS9100 (B TO C)

MORE ON SIGNIFICANT ADDITIONS:

PROJECT MANAGEMENT:

- 1) 7.1.1: AS APPROPRIATE TO THE ORGANIZATION AND THE PRODUCT,
THE ORGANIZATION SHALL PLAN AND MANAGE PRODUCT REALIZATION IN A STRUCTURED AND CONTROLLED MANNER.
- 2) TO MEET REQUIREMENTS AT ACCEPTABLE RISK, WITHIN RESOURCE AND SCHEDULE CONSTRAINTS.
- 3) IMPLICIT IN PARA 7.1.1 IS THAT PROJECT MANAGEMENT SHOULD BE USED TO SUPPORT AND COMMUNICATE CONTINUOUS IMPROVEMENT AND MITIGATE RISKS.



SIGNIFICANT CHANGES AS9100 (B TO C)

MORE ON SIGNIFICANT ADDITIONS:

ON TIME DELIVERY: (5.2 CUSTOMER FOCUS)

- 1) TOP MANAGEMENT SHALL ENSURE THAT PRODUCT CONFORMITY AND ON-TIME DELIVERY PERFORMANCE ARE MEASURED AND THAT APPROPRIATE ACTION IS TAKEN IF PLANNED RESULTS ARE NOT, OR WILL NOT BE, ACHIEVED.

- 2) ON TIME DELIVERY IS NOT AS EASY TO MEASURE, REPORT AND IMPLEMENT PER CUSTOMER REQUIREMENTS, AS IT SOUNDS. PROJECT MANAGEMENT MAY BE NEEDED TO SHOW IMPROVEMENT.

- 3) THIRD PARTY AUDITORS WILL BE LOOKING FOR AN ORGANIZED METHODOLOGY TO MEASURE AND REPORT ON TIME DELIVERY BY EACH CUSTOMER.



SIGNIFICANT CHANGES AS9100 (B TO C)

DELETIONS:

- 1) DELETES CLAUSE 4.2.2.B: (REQUIREMENT TO SHOW THE RELATIONSHIP BETWEEN AS9100 REQUIREMENTS AND THE ORGANIZATION'S DOCUMENTED PROCEDURES)
- 2) DELETES CLAUSE 7.4.3: (VALIDATION OF TEST REPORTS)
- 3) DELETES CLAUSE 8.2.2: (REQUIREMENT FOR "DETAILED TOOLS AND TECHNIQUES".)
- 4) DELETES REFERENCE TO ISO10012-1,2, THE GUIDANCE DOCUMENTS ON CALIBRATION SYSTEMS. (7.6 MONITORING AND MEASURING EQUIPMENT).



SIGNIFICANT CHANGES AS9100 (B TO C)

AS9101 STANDARD (CHECKLIST) USED BY REGISTRAR AUDITORS IS CHANGED SIGNIFICANTLY:

- 1) COVERS AS9100, AS9110 (Repair Stations) 9120.(Distributors)
- 2) DELETES USE OF SCORING.
- 3) FOCUSES ON PROCESS AUDITING AND THE EFFECTIVENESS OF A COMPANIES PROCESSES.
- 4) PUTS MORE EMPHASIS ON PROCESS MEASURING.
- 5) SHIFTS THE AUDITORS ENERGY FROM COMPLETING THE CHECKLIST TO DETERMINING AND DOCUMENTING THE EFFECTIVENESS OF CUSTOMER PROCESSES.



TIME TABLE TO TRANSITION

STATUS OF DOCUMENTS: AS OF 4-12-10

- 1) THE AS9100:2009 STANDARD HAS BEEN PUBLISHED.
- 2) THE AS9101 STANDARD (CHECKLIST), WHICH IS USED BY REGISTRAR AUDITORS TO CONDUCT THE AUDITS, HAS BEEN PUBLISHED.
- 3) THE AS9104/1 STANDARD, WHICH INCLUDES THE REQUIREMENTS FOR ACCREDITATION BODIES (LIKE ANAB), CERTIFICATION BODIES, CERTIFICATION BODY AUDITORS AND DESCRIBES THE PROCESS FOR CONDUCTING AN AEROSPACE AUDIT,

NOTE: ALL OF THESE DOCUMENTS MUST BE PUBLISHED BEFORE A REGISTRAR CAN BEGIN TO CONDUCT AUDITS TO THE AS9100:2009 STANDARD



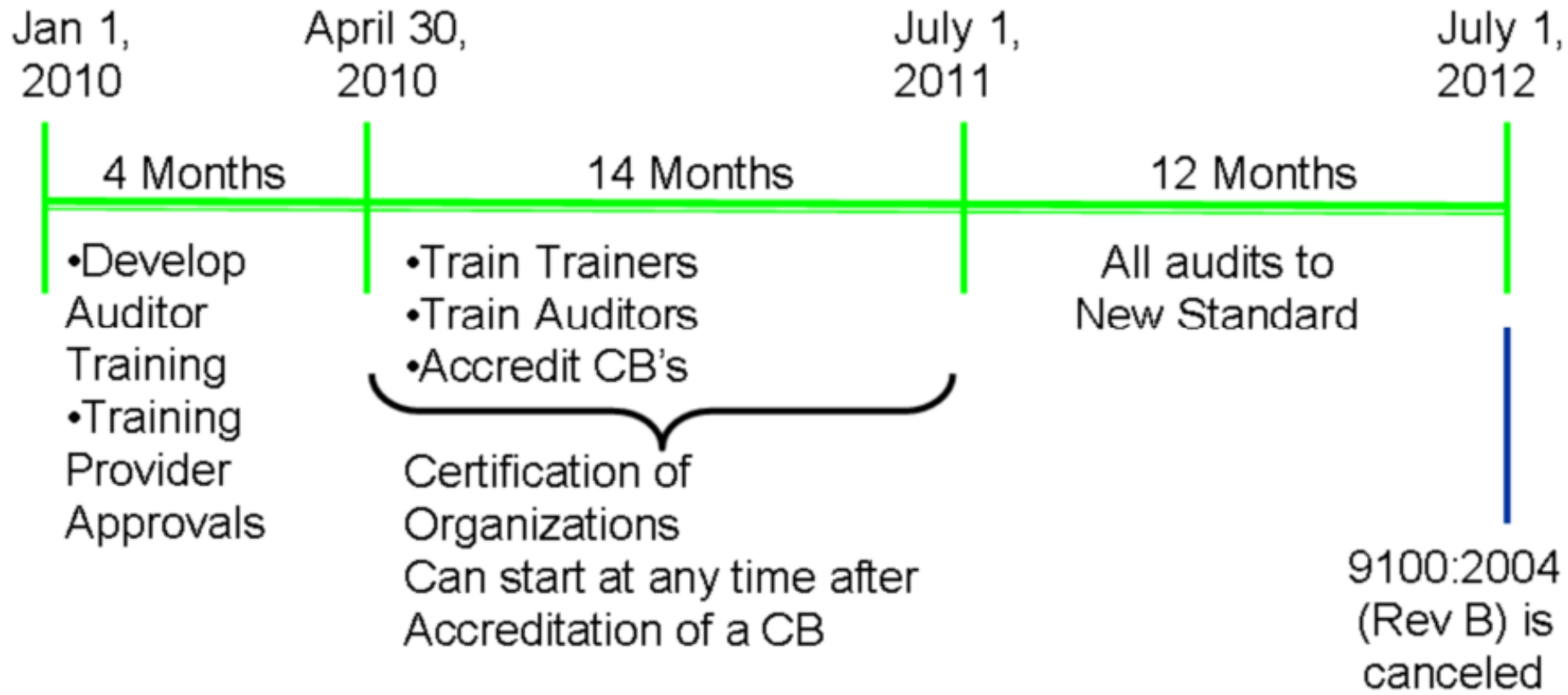
TIME TABLE TO TRANSITION

BEFORE A REGISTRAR CAN CONDUCT REGISTRATION AUDITS TO AS9100:2009:

- 1) THE REGISTRAR MUST BE AUDITED BY ANAB AND THEN ACCREDITED TO PERFORM AUDITS TO AS9100:2009 (EXPECTED SPRING 2010).
- 2) THE AS9100:2009 COURSE FOR CERTIFICATION BODY AUDITORS MUST BE DEVELOPED AND DEPLOYED (EXPECTED MAY/JUNE 2010).
- 3) THE REGISTRAR'S AUDITORS MUST ATTEND THIS COURSE AND THEN GET APPROVED TO CONDUCT AUDITS TO THIS NEW STANDARD (EXPECTED OVER THE SUMMER AND FALL OF 2010)

Note: No new AS9100B certificates can be issued after July 1, 2011 and all companies must be upgraded to AS9100:2009 by July 1, 2012.

30 Month Transition Schedule





TIME TABLE TO TRANSITION B TO C

- 1) IN LIGHT OF THE TIMELINES PRESENTED ON THE PREVIOUS SLIDES, A REGISTRAR MAY BE ABLE TO BEGIN AUDITING TO AS9100:2009 BY MID 2010.
- 2) BUT DUE TO TRAINING COURSE AVAILABILITY, A MORE REALISTIC TIMELINE IS LATE 2010 TO EARLY 2011.
- 3) IF YOU START TO UPGRADE YOUR QMS NOW, KEEP REV B REQUIREMENTS IN PROCEDURES, OR RUN PARALLEL PROCEDURES UNTIL YOU HAVE A DATE YOU WILL BE AUDITED TO AS9100:2009.



TIME TABLE TO TRANSITION

THE STANDARDS SOURCES FOR PROCUREMENT.

- 1) ALL AEROSPACE CUSTOMERS AND POTENTIAL AEROSPACE CUSTOMERS SHOULD PURCHASE THE AS9100:2009 STANDARD AND BECOME FAMILIAR WITH THE NEW REQUIREMENTS
- 2) THE STANDARD CAN BE PURCHASED AT:
[HTTP://WWW.SAE.ORG/TECHNICAL/STANDARDS/AS9100C](http://www.sae.org/technical/standards/AS9100C)
[HTTP://WWW.SAE.ORG/TECHNICAL/STANDARDS/AS9110A](http://www.sae.org/technical/standards/AS9110A)
[HTTP://WWW.SAE.ORG/TECHNICAL/STANDARDS/AS9120A](http://www.sae.org/technical/standards/AS9120A)



ACTION PLAN FOR TRANSITION TO AS9100C

PRIOR TO YOUR UPGRADE AUDIT:

- 1) IMPLEMENT THE REQUIREMENTS OF AS9100:2009 INTO YOUR QUALITY MANAGEMENT SYSTEM.
- 2) PERFORM A GAP ANALYSIS TO IDENTIFY POTENTIAL PROBLEM AREAS
- 3) REVISE QMS DOCUMENTATION, TRAIN PERSONNEL, IMPLEMENTATION CHANGES.
- 4) TRAIN INTERNAL AUDITORS, CONDUCT AUDITS, ONE CYCLE.
- 5) CONDUCT A MANAGEMENT REVIEW OF YOUR REVISED QUALITY MANAGEMENT SYSTEM.



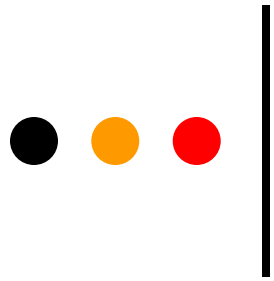
ACTION PLAN FOR TRANSITION TO AS9100C

- 1) COMMUNICATE WITH YOUR REGISTRAR SUPPORT REPRESENTATIVE AND YOUR REGISTRAR LEAD AUDITOR REGARDING YOUR PLANNING TO UPDATE TO AS9100:2009.
- 2) YOUR REGISTRAR WILL LET YOU KNOW THE REQUIRED LENGTH IN DAYS OF YOUR UPGRADE AUDIT AND DISCUSS YOUR PLANS TO UPGRADE TAKING INTO ACCOUNT YOUR SCHEDULE AND AUDITOR AVAILABILITY
- 3) **REMEMBER: ALL CERTIFICATION AND RE-CERTIFICATION AUDITS AFTER 1 JULY 2011 MUST BE TO THE AS9100:2009 STANDARD AND ALL AEROSPACE COMPANIES MUST UPGRADE TO THE 2009 REVISION OF AS9100, AS9110 AND AS9120 BY 1 JULY 2012**



SUMMARY

- 1) START NOW BUT BE CAUTIOUS.
- 2) KNOW YOUR INITIAL AS9100:2009 AUDIT DATE.
- 3) CHECK WITH YOUR REGISTRAR....AUDIT DAYS ARE INCREASING.
- 4) THE COSTS OF REGISTRATION TO AS9100C IS INCREASING



SUMMARY

END