

Systemsys Ltd

Improve your business with Training & Consultancy on Process based Systems & obtain third party Approval when required, e.g. to ISO 9001 &/or IATF16949.

See 'Contents' & the SYS guide, numerous published articles & the website.



Systemsys: "Providing Support to Industry since 2005"

Note this iBrochure can be saved in different formats, e.g. iBooks on Apple.



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Introduction to Systemsys Ltd

Systemsys Ltd helps companies, particularly in the UK, to improve their business performance using the Process Approach and obtain third party Approval where this is required.

Training & Consultancy & Contact

We provide [Training & Consultancy Support](#) for Auditors, (Also sometimes referred to as 'Assessors' Management, & Product & Process Engineers.

See Page 4.

Support is outlined in the [Consultancy/Workshop](#) sections and includes identifying company's key processes and mapping them out with their Key Performance Indicators. Levels 1 (System Map) & 2 (Process Maps) of a working 'html' system can be seen in the [Example](#) section of the website.

- Consultancy can extend to full implementation support to achieve accredited approval to a standard.
- Services are delivered by Professional Engineers with extensive experience of Group Management, 3rd party auditing and Training & Qualifying 3rd party auditors.
- Companies that have been supported, have achieved or maintained approval as required to the Quality Management Standards ISO9001 and/or the Automotive QMS standards based on it and improved their business performance.

- SYS aims to provide the best service possible and be seen as achieving this, as is shown in representative comments in the [Customer Feedback](#) section of the website.

[Introducing the Process Approach.](#) See the website.

Contact

If there is anything that we can do to support you, then do let us know for example via the [contact us](#) page of the website; www.systemsys.co.uk.

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Section 1

1. Management & Audit Training: Overviews Based on standards, including the current versions of **ISO 9001** & the Automotive QMS Standard **IATF16949**.

Awareness / detailed workshops / Gap Analysis;
(In-house) Typically 0.5 day Awareness - 1 or 2-day detailed workshops
To give Management / Teams at all levels of the organization the
necessary information about the Process Approach & related standards
such as ISO9001 & IATF16949, to support successful implementation &
aligning the system with their own business / strategy. **See Page 7, 'day 1'.**

Foundation Internal Auditor Courses & Workshops.

ISO9001 & IATF16949 (Open & In-house)

Gives auditors the necessary skills to undertake effective internal
system & process audits. ** **See Page 7**

Auditor Courses & Workshops. 5 or 6 day courses

** Note: referred to by some as 'Assessor' course or 'Lead Assessor course'.*

ISO9001 & IATF16949 (Options available, Open & In-house).

Gives new & existing Automotive Auditors the necessary skills to
undertake effective Audits, either on their own or eventually leading a
team. Performance and written examinations & certification of
achievements. ** **See Pages 8 & 9**

** Most Audit courses allow you to undertake real audits;
for the in-house course these are against your audit schedule.

Lead Auditor Coaching & Assessment

Post course Coaching / Assessment Follow-up activity to course, once sufficient
audits completed successfully; sign-off as competent at defined level.

AUDITING Ref. article from IET Engineering Management. Request your copy



2. Core Tools Training: Overviews

Objectives: (Open or In-house) Typically 1 –2 day workshops. Gives organizations the necessary information to undertake effective audits of their Core Tools & / or implementing an effective system. These include:

Quality Planning & Part Approval APQP/PPAP

New Product Introduction & Part Approval Frameworks.

Understand the Project Management/sign-off process. See Page 10

Failure Mode & Effects Analysis (FMEA)#

Understand this key risk analysis tool that supports effective Product & Process Design within APQP.

Can then lead to support in creation of Control Plans. See Page 10

Statistical Process Control (SPC)#

Using Statistics to understand & reduce the variation

in your manufacturing processes & resultant products. See Page 11

Measurement Systems Analysis (MSA)

Using statistics to understand your measurement

system errors & reduce the variation present in them. See Page 11

Disciplined Problem Solving (DPS)#

Understand & use this defined Corrective Action

framework using a team to solve complex problems. See Page 12

#Reference articles from 'quality world' magazine. Request your copy



3. Consultancy Support: Outline

Related Business System Consultancy Support

In-house Support as required, e.g. as per the following; *

1. System Map —>

In 1 day the key processes, can be determined & their sequence & interaction shown in a visual System Map. Some of these Processes can then be mapped, with their Key Performance Indicators ('KPI's) being identified.



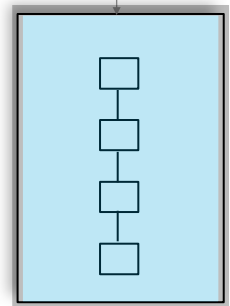
2. Process Maps —>

In about 2 days, the remainder of the processes can be mapped, completing the Level 1 System Map & Level 2 Process Maps, and identifying KPIs.



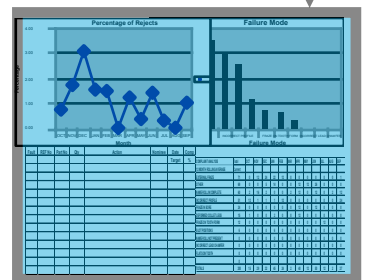
3. Documented Information —>

Provide support with your System, including Level 3 Instructions & Level 4 Forms: Supporting the publishing your system in a standard format that can be accessed by everyone, e.g. for intranet in '://html'.



4. Gap / Pre-Assessments / Guidance;

Identify any gaps in system against relevant standards. Assisting in implementing the system and achieving/maintaining Improvement & 3rd Party Approval Interim / on-going Parts of the system can be operated for you.



Example KPI

See also the *SYS iGuide*; see website or ask for a copy.

* SYSTEM: Ref. article from IET Engineering Management. Request your copy



4. 'Foundation' Auditor Course Details

Course Outlines: ISO 9001 or IATF 16949.

Ref. outline on Page 4

▶ **3-day Course:**

🔍 **DAY 1 —'Classroom Training'**

- ▶ Course / Delegates' Objectives
- ▶ Background to Standards
- ▶ The Process approach & Risk based-thinking
- ▶ Integrated Frameworks, e.g. ISO14001
- ▶ Goal of Standard
- ▶ Support Documents, Guidance & Rules
- ▶ Scope & Application
- ▶ Management Systems / Documentation requirements
- ▶ Strategy / Policy Deployment
- ▶ Process Analysis / Key Performance Indicators
- ▶ Customer Satisfaction / Specific Requirements.
- ▶ Audit Planning & Qualification
- ▶ Start on the Standard

🔍 **DAY 2 —'Classroom Training'**

- ▶ The detail of the standard;
- ▶ Audit Process, Reports & Corrective Actions
- ▶ Undertaking Case Study Audits.

🔍 **DAY 3 —Audit 'Workshop'**

- ▶ Preparing to undertake an audit
- ▶ Undertaking Audit of Business Process
- ▶ Writing-up the audit
- ▶ Feeding back on the audit results

Certification against the above.

(For Automotive; this is a good foundation course, to start the development of auditors towards meeting the full requirements of the Automotive QMS standard.)

AUDITING Ref. article from IET Engineering Management. Request your copy



5. Auditor* Courses Details

Course Outline: 'IATF 16949' courses.

Overview: each 'Part' for all options

Note: ref. also outline on Page 4.

* Note: referred to by some colloquially as 'Assessor' course or 'Lead Assessor course'.

▶ **Part 0:** Pre-Evaluation. Questions on topics to be covered.

▶ **Part I:** Class room Training and Exercises in:
Awareness, Automotive Process Approach, Risk Based Thinking, The Standards, Customer specific requirements, Case studies
Core tools including, 'SPC', 'FMEA', 'MSA'; Audit process

▶ **Part II: Audit & Evaluation**
On-site audits to schedule, Performance evaluation 'a'
Examination, Write-up Audit, present findings, evaluation 'b'

▶ **Part III.** Marking exams & issuing Certificates/reports stating results. see 'Part IV'

▶ **Part IV.** Post course work. e.g. Audits. CSRs. Assessments. Training needs identified....

Details; 1: a. Upgrade course; ask about Options for delegates who have recently 'passed'.

b. 5-day auditor course

(There are pre-requisites e.g. ISO9001:2015, some experience of Core Tools. or see Option 2.)

🔍 **Mon.** Course / Delegates' Objectives
Background to Standards, Goal of the Standard
The Automotive Process approach & Risk-based thinking
Integrated Frameworks & Effective Systems
Management Systems / Documented Information
Strategy / Policy Deployment, Process Analysis
Key Performance Indicators, Customer Satisfaction
Start on IATF 16949 standard in detail

🔍 **Tue.** IATF 16949's standard, inc. Appendices, & Case Studies

🔍 **Wed.** Customer Specific Requirements & Core Tools, including:
Failure Modes & effects Analysis (FMEA)
Statistical Process Control (SPC)
Measurement System Analysis (MSA)
Audit Process; Planning, Auditing & Qualification Criteria

🔍 **Thu.** Undertake live Audits to schedule; ISO9001, IATF16949 & CSRs
Performance Evaluation

🔍 **Fri.** Written exam, Audit Write-Up & feedback






5. Auditor course (cont.d) 2; Two; 3-day Modules ('6-day');

MODULE I

-  **Day 1.** Course / Delegates' Objectives
Background to Standards
The Automotive Process approach & Risk-based thinking
ISO9001 Standard in detail
-  **Day 2.** Integrated Frameworks & Effective Systems
Goal of Standard
Support Documents, Guidance & Rules, Scope
Management Systems / Documented Information
Strategy / Policy Deployment, Process Analysis
Key Performance Indicators,
Customer Satisfaction
IATF16949 Automotive standard start detail, clause by clause;
-  **Day 3.** IATF16949 standard, inc. Appendices; & case study audits
Customer Specific Requirements (CSRs)

MODULE II

-  **Day 1.** Assessing Core Tools:
Advanced Product Quality Planning (APQP)
Production Part Approval Process (PPAP)
Failure Modes & effects Analysis (FMEA)
Statistical Process Control (SPC)
Measurement System Analysis (MSA)
-  **Day 2.** Audit Process; Planning, Auditing
Auditor Qualification Criteria
CSRs.
Starting Audit preparation
-  **Day 3.** Written exam
Undertake live Audits to schedule; ISO9001, IATF16949 & CSRs
Performance Evaluation
Audit Write-Up & feedback

This recommended course is; two 3-day modules held between a week and a month apart. This helps delegates to focus on the standards in module I and then consider / apply them before the next topics of module II. If delegates have proven competence in certain areas then they can modify slightly their attendance. In-house courses can be tailored to suit the company.



Section 6

6. New Product Introduction & FMEA

Quality Planning / Part Approval.

Introduction: 'Plan Do Check Act' Note: ref. outline on Page 5

APQP Phase I: PLAN & DEFINE PROGRAMME

Inputs: eg. Business Plan & Outputs: eg. Design Goals. Inputs for section II

APQP Phase II: PRODUCT DESIGN & DEVELOPMENT

Outputs: eg. Design FMEA, Design Review, Drawings

Outputs: (Team). New Equipment & Testing requirements

APQP Phase III: PROCESS DESIGN & DEVELOPMENT

Outputs: Process Flow, PFMEA, Measurement system analysis

APQP Phase IV: PRODUCT & PROCESS VALIDATION

Outputs: Validation, Control Plan, Process Capability, sign-off

Part Approval: PAP: PPAP AIAG PPAP Manual

Reporting Requirements; Notification, Submission, Records

APQP Phase V: FEEDBACK, ASSESSMENT, CORRECTIVE ACTION

Outputs: Reduced Variation, Improved; Satisfaction, QCD & APQP Process.
Management Support, 'throughout' Process.

Failure Mode & Effects Analysis (FMEA) Risk Analysis

Introduction: Objectives, Note: ref. outline on Page 5
Successful Implementation, 'Plan Do Check Act' Cycle

Inputs; Measurement Tools; Data, e.g. 'QOS'

FMEA process; Creation, When should you create an FMEA?
Who should be involved? Define Scope & Customers

Preparation; e.g. Block Diagram, Process Flow

FMEA Elements; (Form, 'options')

DFMEA (Product Design) & PFMEA (Process Design)

Function, Failure Mode, Effects, Potential Causes

Controls; Prevention/Detection

Severity, Occurrence, Detection, scores Risk Assessment, 'RPN',

Actions & Follow-up & Continuous Improvement. Link to Control Plan.

Workshop; Creation of actual Documents:

DFMEAs, PFMEAs & Control Plans.



7. Statistical Techniques

Statistical Process Control (SPC)

Note: ref. outlines on Page 5


- ✔ **Course / Delegates' Objectives**
 - Goal of Standards, e.g. IATF16949**
- ✔ **Process Control**
- ✔ **Variation / Distribution**
 - Location of a Process; 'Its Setting'**
 - Spread of a Process; 'Its Variability'**
 - Variables & Attributes; 'Types of data.'**
- ✔ **Control Charts; 'Understanding & developing.'**
- ✔ **Process Capability; Cpk & Performance. Ppk**
 - 'Calculating & reviewing.'**
- ✔ **Auditing SPC: Where is the company today?**
- ✔ **Workshop(s); 'Implementing SPC'.**


Measurement System Analysis (MSA)


- ⌚ **Course / Delegates' Objectives**
 - Measurement System Variability**
 - IATF16949's Requirements**
 - Measurement System Error**
 - Location errors;**
 - 'Bias', 'Linearity', 'Stability'**
 - Spread errors;**
 - 'Repeatability' & 'Reproducibility'**
- ⌚ **Gauge R&R Studies; Variable & Attribute**
- ⌚ **Analysis of Results – 'Data sheets',**
 - 'Graphical' Techniques**
- ⌚ **Auditing MSA; Where is the company today?**
- ⌚ **Workshop(s); 'Implementing MSA'.**





8. Disciplined Problem Solving


 **D0 Determine the Problem.** Note: ref. outline on Page 5
Establish what problem(s) need to be addressed. *Data*


 **D1 Use a Team Approach**
Establish a small group of people with the process / product knowledge, allocated time, authority and skill in the required technical disciplines to solve the problem & implement corrective actions. They must have a designated champion. *PDCA, Team*


 **D2 Describe the problem**
Specify the internal / external customer problem by identifying in quantifiable terms; who, what, when, where, why, how / many. *Process Flow, Cause & Effect, Pareto, FMEA*


 **D3 Containment Action**
Define, implement & verify containment actions to isolate the problem from any internal / external customer until permanent corrective action is available. *Brainstorming, Bar Charts*

 **D4 Root Causes(s)**
Identify all potential causes which could explain why the problem occurred. Isolate & verify the root cause(s) by testing each potential cause against problem description. *Brainstorming, C&E*

 **D5 Corrective Actions**
Identify & verify alternative actions to eliminate Root Cause. Through pre-production test programmes, quantitatively confirm that the selected corrective actions will resolve the problem for the customer & will not cause undesirable side-effects. *Cause & Effect.*

 **D6 Permanent Corrective Action**
Define & implement the best permanent corrective actions. Choose on-going controls to ensure the root cause is eliminated. Once in production, monitor long-term effects. *Pareto, FMEA*

 **D7 Prevent Recurrence**
Modify the management systems, practices & procedures to prevent recurrence of this & similar problems. *BMS, FMEA*

 **D8 Congratulate the team**
Recognise the collective efforts of the team. *Multi-Disciplinary Approach*

