RSS 18404

Royal Statistical Society Certification Scheme for demonstrating compliance to ISO 18404:2015

This document describes the Royal Statistical Society's Certification Scheme for organisational certification against ISO 18404. It is intended primarily to be used for reference by participating Accredited Certification Bodies and their client organisations, as well as the United Kingdom Accreditation Service UKAS, and individuals wishing to be certified for their competence under ISO 18404. The scheme, which is known as RSS 18404, should be read in conjunction with ISO 18404.

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2. Exclusion of Liability

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4. Quality Management Systems Requirements

RSS 18404 is a management system for Six Sigma and Lean and therefore the ISO high level structure and content for management systems must be followed in applying it. Broadly therefore, ISO 18404 can be interpreted as being the same as ISO 9001, but with the word "quality" deleted and replaced with "Six Sigma and Lean".

Whilst all requirements must be demonstrated as appropriate to Six Sigma and Lean, this means that ISO 9001:2015 is a normative document for the scheme and must be read in conjunction with ISO 18404 but replacing quality with Six Sigma and Lean where applicable. This will enable organisations to overlay ISO 18404 onto their QMS.

5. Normative Document

ISO 9001:2015 is a normative document for the scheme deleting references to "quality" and replacing with "Six Sigma and Lean".

6. Selection of Certification Body

Organisations seeking certification under this Sector Scheme should ensure that they engage a Certification Body approved by RSS under the scheme. Details can be provided by RSS.

7. ISO 18404 and the Sector Scheme

ISO 18404 is a standard for 'Quantitative methods in process improvement – Six Sigma – Competencies for Key Personnel and their organisations in relation to Six Sigma and Lean implementation'.

From its early origins in Motorola and GE, Six Sigma has been a management system rather than just a tool, itself utilising a large number of statistical and other tools that long predate it. The top down management deployment, with quantified objectives, project managed application projects, and trained workforce specialists (the Green, Black and Master Black Belts) has proved effective for the systematic management of fact-based process, product and service orientated improvement across a range of manufacturing, engineering, banking, service and public sector organisations.

Originating largely from Toyota, Lean transformation also shares both the evidence of widespread success, and the distinction of being a management system for continuous improvement reflecting a customer focused never-ending improvement paradigm, not just a tool.

The ISO 18404 standard outlines competence requirements for people delivering Six Sigma projects and Lean improvement, and the requirements for organisations managing these. The standard defines nine distinct roles of individuals; Six Sigma or Lean and Six Sigma Green Belts, Black Belts and Master Black Belts; and Lean Practitioners, Lean Leaders and Lean Experts.

The requirements on the individuals are relatively prescriptive and have suggested evidence criteria.

The requirements on the organisation are about establishing and maintaining a management system for Six Sigma and/or Lean implementation, including how the organisation manages the competence of the people. As such, ISO 18404 is suitable for conformity assessment by accredited Certification Bodies meeting ISO/IEC 17021-1 2015 Conformity assessment - Requirements for bodies providing audit and certification of management systems. There is consistency of terminology and approach with the ISO high level structure (for management systems standard) and Plan- Do-Check-Act (PDCA) principles. See Appendix 1.

The competence of the people will be established through 'Assessment Centres' which will be in part an interview process and test and in part a review of evidence of applying, managing and training the competencies as required.

For Six Sigma Green Belts and Lean Practitioners a certified organisation will be able to certify the competence of the individuals delivering the projects and improvement provided they have access to people competent to do so.

For Six Sigma Black Belts and Master Black Belts or Lean Leaders and Experts and people not working for certified organisations, the RSS or an organisation approved to do so by it, will establish the competence of the people.

The system an organisation has in place to manage the competence of the people they employ will be established through an assessment of the system in a similar way to which an ISO 9001 system is assessed.

8. Rationale for the scheme and Support for ISO 18404 Certification

Reason for Development of ISO 18404

- Six Sigma and Lean is a large, lucrative and growing process improvement, training and recognition market.
- There were many certifications on offer that did not provide the required assurance/integrity.

Value to certified individuals

- Ability to demonstrate they genuinely have the skills they claim to.
- Ability to identify those organisations that have Lean / Six Sigma approaches which will allow them to use their skills.

Value of certification for industry

- Increased confidence in the ability of people claiming to be skilled in Lean or Six Sigma.
- Increase ability to attract employees seeking organisations which will support their professional development.
- Improvement in the structure in place in organisations to maximise the benefit organisations gain from their Lean and Six Sigma people.
- Increased recognition and confidence by downstream customers.
- Increased coherence in approach and alignment on achieving objectives.
- Commitment to maintaining competence and its integrity.

Value of certification for wider society

- Better implementation of Lean and Six Sigma will reduce waste, reduce variation and improve productivity resulting in greater added value to the economy.

Support for certification

- The fact that ISO 18404 has been created as a BS ISO standard indicates broad market support.
- Global and smaller organisations in manufacturing, utilities, communications, banking, broader service sector and public sector already considering certification possibilities and in some cases doing gap analyses.
- International interest in Sector Scheme from a number of countries, including delegation to discuss the Sector Scheme from Japan.

9. Structure of the Scheme and Role of the RSS

- The RSS is the owner of the Sector Scheme and will be responsible for its overall operations, maintenance of the scheme, and the qualification and monitoring of the participating Certification Bodies.

- RSS will maintain a list of recognised Certification Bodies and Assessors.

- Certification Bodies' Lead auditors under the scheme must have been trained and certified by the RSS. There is a requirement for recertification on a three-year cycle, or earlier if the auditor has not undertaken adequate RSS 18404 auditing to maintain competence.

- Organisations will be certified to RSS 18404 by the participating Certification Bodies based on their implementation of the management system elements of the standard and a demonstration that the system they have in place has been applied to all people for which they claim competence.

- People within the organisation must have a recognition of competence from the RSS (or RSS approved body) or recognition of competence from the organisation they work for in the case of Green Belts or Lean Practitioners.

- In collaboration with the participating Certification Bodies, the RSS will create and maintain a unified register of all assessed competent personnel, whether assessed by them or by the certified organisations.

- The RSS will establish and maintain a list of approved courses, with associated approval process, for individuals interested in certification under RSS 18404 which are regarded as suitable in curriculum, method of training, trainers and administration.

- Participating Certification Bodies and approved training providers will be issued with guidance on the use of the RSS logo and other material.

10. Content of the assessment by a Certification Body

- Certification Bodies will be expected to assess the system the organisation has in place for managing the competence of its Key Personnel under the standard.

- The assessment will not directly assess the competence of each individual. It will assess the system to establish and manage the competence of the individuals in the organisation.

- As part of the assessment, Certification Bodies will obtain the names and full contact details of all named Key Personnel within the organisation and it is a condition of the Sector Scheme that such information can and will be immediately transferred to RSS along with the certified organisation's details following completion of the assessment or surveillance visit.

11. Certification Cycle

- The certification cycle for organisations will be delivered in the same pattern as described in IAF MD5 (Annual Surveillance durations are 1/3 of the Initial Assessment and Reassessments are 2/3 of the Initial Assessment).

- The Certification Body will be expected to establish the effectiveness of the system with respect to each qualified individual within the organisation during the three-year cycle.

- For individuals, recertification is normally required annually internally within a certified organisation for all defined Key Personnel except Master Black Belts and Lean Experts. In addition, all Key Personnel except Green Belts and Lean Practitioners are required to be recertified every three years by RSS. Assessment of competence at recertification will include current maintenance of practice.

12. Durations

The table below shows the duration in days of the total initial assessment (usually split into a stage 1 and a stage 2 assessment).

The total number of employees is the total number of employees covered in the scope of the certification. This means the number of people directly influenced by the change activities that the Six Sigma and Lean people are involved in. The percentage scale across the top indicates the percentage of the people in the scope of certification who are Six Sigma and Lean Qualified. E.g. an organisation with 100 employees, four of which were Six Sigma qualified would require a two-day Initial Assessment.

The minimum duration for any assessment of any type will be one day.

	% of those people in scope who are Six Sigma / Lean Qualified				
	< 1%	1% to 5%	6% to 10%	11% to 20%	>20%
1 to 5	1	1	1	1	1
6 to 10	1	1	1	1	2
11 to 15	1	1	1	1	3
16 to 25	1	1	1	1	4
26 to 45	1	1	1	2	5
46 to 65	1	1	2	3	6
66 to 85	1	1	2	3	6
86 to 125	1	2	3	4	7
126 to 175	1	2	4	5	8
176 to 275	1	3	4	6	9
276 to 425	2	4	6	7	10
426 to 625	2	5	7	9	11
626+	3	6	8	10	12

Total Employees in Scope

If done in conjunction with an ISO 9001 assessment, annual surveillance and reassessments audit durations can be reduced by 30%. This is because an ISO 9001 compliant system would already cover much of the system requirements in RSS 18404. However, time would be required to establish that the system had been effective in reviewing the competence of each Lean and Six Sigma qualified person.

Initial assessments may not be done in conjunction with any other assessments.

13. Certificate Validity

Certificates to RSS 18404 issued by Certification Bodies to organisations will be valid for three years from the date of issue on the certificate.

14. Certification Body Approval

Recognition by the RSS

- Recognition is initially available to any Certification Body holding accreditation from an IAF member accreditation body to ISO 17021 for ISO 9001.
- Certification Bodies must comply with the requirements of this document.
- Certification Bodies must operate the certificate scheme in accordance with ISO 17021.

Assessor Competence

- Assessor must be operating under an RSS recognised Certification Body.
- Assessor must be a lead auditor qualified by their Certification Body for RSS 18404.
- Assessors must attend and pass an RSS Lead Auditor course on RSS 18404 requirements.
- Assessors must be re-qualified by RSS every three years.
- Assessors must maintain a minimum of eight days auditing to RSS 18404 in the last two years or RSS requalification is required.

RSS oversight of Certification Bodies

- The RSS will be responsible for the qualification and monitoring of the participating Certification Bodies.
- Annual reviews will be undertaken and an annual meeting held to share best practices.

15. Requirements for people seeking certification

Approval for people working in a certified organisation

Green Belts can be internally approved each year by an approved Black Belt or Master Black Belt. Lean Practitioners can be internally approved each year by an approved Lean Leader or Lean Expert.

Black Belts and Lean Leaders are initially approved by the RSS (or RSS approved body) who will also reapprove them every three years. Annually revalidation can be done by an approved Master Black Belt or Lean Expert as appropriate.

The approving person can be employed directly by the organisation or can be contracted in on a temporary basis.

Master Black Belts and Lean Experts will be initially approved by the RSS (or RSS approved body) and re approved by the RSS (or RSS approved body) every three years.

Approval for people not working in a certified organisation

These are required to be approved by the RSS (or RSS approved body) every year.

16. Approval of Courses and Assessment Centres (Personnel)

The RSS will approve qualifying training courses and the external delivery of assessment centres.

17. Governance of the Sector Scheme

The RSS 18404 Oversight Committee reporting to the Quality Improvement Section is responsible for the governance of the Sector Scheme on behalf of the RSS.

18. Unified register of Key Personnel

The RSS will maintain a unified register on the certification status of Key Personnel following the Sector Scheme.

The unified register acts as a global reference providing an up-to-date status of the certification of Key Personnel, facilitates movement of individuals between organisations (see appendix 4) and improves employability for both organisations and individuals.

The RSS will automatically maintain the registration of Six Sigma Black and Master Black Belts as well as Lean Leaders and Experts.

For Green Belts and Lean practitioners, it is the responsibilities of the certified organisations and/or individuals to request incorporation in the unified registry.

19. International Operations

The RSS has the intention to deploy the Sector Scheme internationally.

20. Scheme Contact

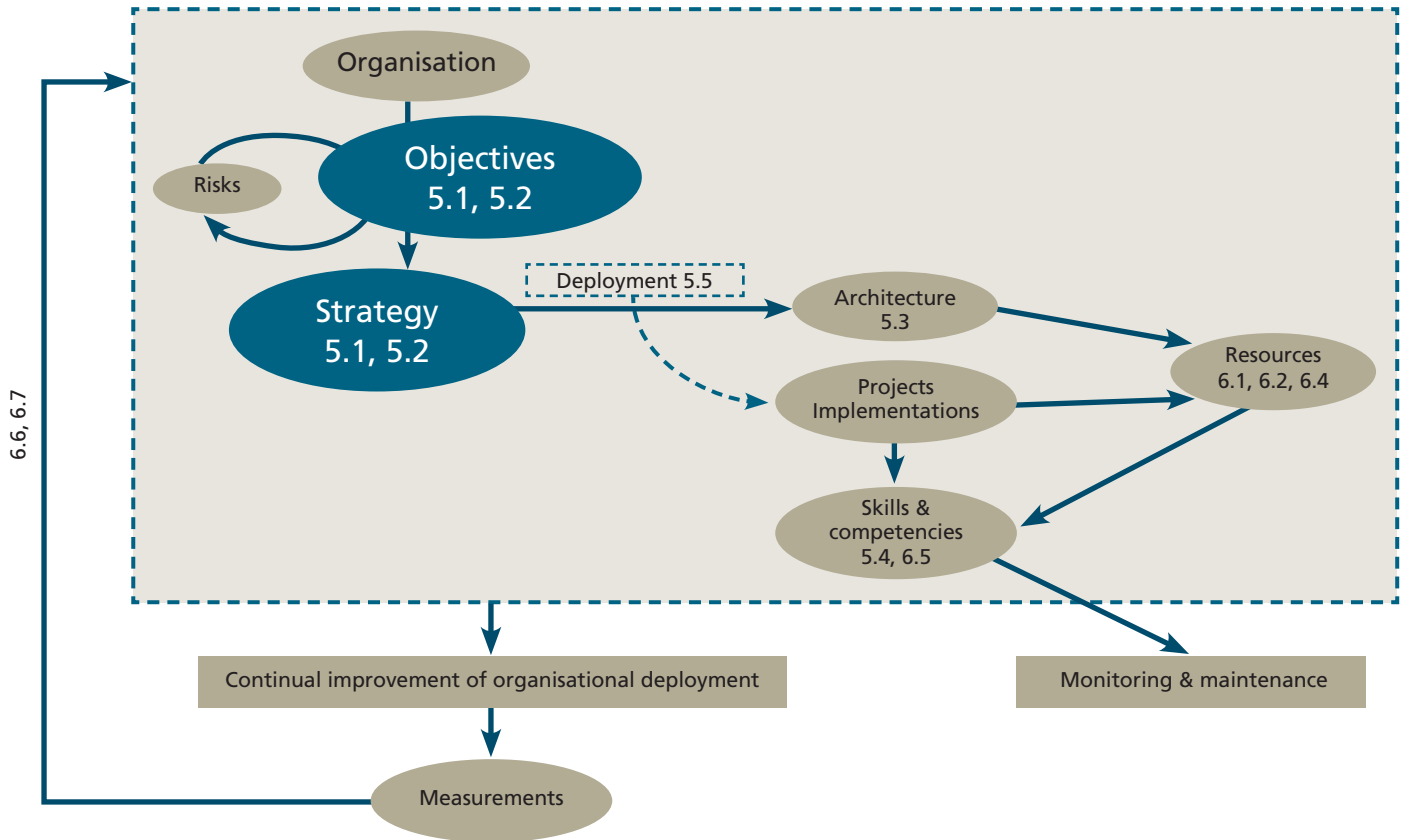**Royal Statistical Society**
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Appendix 1. Clauses of ISO 18404

Appendix 2. Sector Scheme Organisational Self-Assessment Tool

A ten question assessment to help you identify the maturity and overall progress of your organisation's Six Sigma and/or Lean implementations.

Select one of a, b, c, d as the most appropriate answer for your organisation to each question.

a-d are progressive, and the worst statement applicable to the organisation should be selected corresponding to the furthest applicable letter through the alphabet.

PURPOSE AND STRATEGY

1) Why is your organisation pursuing Lean and/or Six Sigma?
  a. Explicit link to organisational objectives & strategy
  b. General interest in improvement
  c. Desire to limit waste & use resources well
  d. Not clear.

2) Does your organisation have a clear strategy for Lean and/or Six Sigma?
  a. Clear documented and maintained strategy with objectives for approach & deployment
  b. Directional strategy based on a general interest in improvement
  c. Waste minimisation/ resource utilisation strategy
  d. No clear strategy.

RESOURCES

3) Are the resources and organisational architecture necessary for implementation of Lean and/or Six Sigma
  a. Appropriately defined, provided and maintained throughout the organisation
  b. Generally adequate throughout although not defined in advance
  c. Adequate to allow some improvement to take place
  d. Inadequate.

4) Are the required skills and competences of the key Lean and/or Six Sigma personnel in the organisation
  a. Defined, achieved and maintained
  b. Generally adequate although generic & not fully defined
  c. Largely adequate but variable and not necessarily maintained fully
  d. Limited.

MEASUREMENT

5) Is measurement of adequacy & improvement of Lean and/or Six Sigma deployment
  a. Achieved through a system of appropriate defined and maintained deployment metrics and targets
  b. In general, adequate although not fully systematic
  c. Largely adequate but variable
  d. Haphazard.

6) Is information from measurement used to

    a. Review progress against the targets and adjust deployment in accordance with the defined strategy for Lean and/or Six Sigma, and to continually improve

    b. Provide a general 'sanity check' on progress with occasional adjustments to direction

    c. Used haphazardly

    d. Not used.

FACT BASED IMPROVEMENT

7) Does the organisation

    a. Have an overall systematic approach to the measurement, analysis and improvement of the whole Lean and/or Six Sigma programme and the resources required to support it

    b. Have an approach that is in general adequate, although not fully systematic

    c. Have a non-systematic approach

    d. Have no clear approach.

COMPETENCIES OF KEY PERSONNEL

8) Has the organisation

    a. Defined and maintained the competences and objectives required for each category of its key Lean and/or Six Sigma personnel, e.g. Green & Black Belts or Lean Practitioners

    b. Adopted a generic body of knowledge, or training curriculum, supposed to support the competency requirements for each category of its key Lean and/or Six Sigma personnel

    c. Identified team members with appropriate developed competences, that it relies on as its key Lean and/or Six Sigma personnel

    d. No clear approach to defining the competences and objectives required for its key Lean and/or Six Sigma personnel.

BODY OF KNOWLEDGE AND TRAINING

9) Has the organisation

    a. Defined the body of knowledge, and the training and development plans required, for each category of its key Lean and/or Six Sigma personnel to meet the required competency and objective requirements

    b. Adopted generic bodies of knowledge for its key Lean and/or Six Sigma personnel

    c. Allowed individual key Lean and/or Six Sigma personnel to define their own personal body of knowledge requirements

    d. No defined body of knowledge.

10) Has the organisation

    a. Established adequate mechanisms to achieve and verify the achievement of the required competencies for each member of each category of its key Lean and/or Six Sigma personnel, and to provide a repository of timely evidence

    b. No structured repository of evidence of the achievement of the required competencies for its key Lean and/or Six Sigma personnel

    c. No adequate mechanisms to verify the achievement of the required competencies for its key Lean and/or Six Sigma personnel

    d. No adequate mechanisms to achieve the required competencies for its key Lean and/or Six Sigma personnel.

Appendix 3. Interpretation of ISO 18404

There are a number of typographical errors, mistakes and ambiguities in the published version of ISO 18404. **The Sector Scheme aims to minimise the impact of these through interpretation and guidance.** Accordingly, typographical errors should be ignored.

References to ISO13053 may also be unclear/misleading/erroneous as to level of prescribed requirement. For the avoidance of doubt, under the Sector Scheme these are interpreted as advisory only (*"if applicable"*).

In section 5.1 of the standard, the sentence:

'The organization shall, at regular defined, justified intervals and in alignment with business objectives, review and adjust the Six Sigma, Lean or "Lean & Six Sigma" strategy by an appropriate authority.'

is interpreted by the Sector Scheme to mean:

'The organization shall, at regular defined, justified intervals and in alignment with business objectives, review and adjust the Six Sigma, Lean or "Lean & Six Sigma" strategy. The organisation's Six Sigma, Lean or "Lean & Six Sigma" approach and deployment shall be assessed regularly by an appropriate authority.'

Appendix 4. Requirement on Numbers of Key Personnel

Minimum number of named Key Personnel within a certified organisation

For an organisation of up to 20 staff there must be at least two named Key Personnel of which at least one must be a full-time employee. For organisation of over 20 staff, there must be at least three named Key Personnel of which two must be full time employees. Other named Key Personnel may be contract or part-time.

MOVEMENT OF PERSONNEL BETWEEN ORGANISATIONS

The responsibility is with the individual to ensure that they get recertified with 12 months of their last certification.

Where an individual is certified by their employer, RSS will require contact details to allow it to ask the individual whether they wish to be added to the register of certified individuals in a personal capacity.

RECORDING OF NUMBER OF KEY PERSONNEL ON CERTIFIED BODY CERTIFICATE

The names and numbers of named Key Personnel of each type within an organisation will be recorded and maintained by the Certified Body on the back of all certificates of compliance against RSS 18404. Where changes in named Key Personnel are noted at a surveillance visit a new certificate shall be issued by the Certified Body and RSS will be informed.