# QMS/ ISO 9001:2015 Mapping to Scrum

ISO 9001 is document driven. The Scrum process can generate the following set of documents:

* At the start of the project: **Process adaptation/ Charter**
* Before each iteration: New and changed requirements – **The Product Backlog**
* After each iteration:

1. Evaluation of conformity to requirements
2. Review of process conformity
3. Problems and their causes

## Mapping

The below table represents the Scrum implementation of ISO 9001:2015 Clauses.

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| **Clause of ISO 9001: 2015** | **Requirement of the Clause** | **Scrum Practice** |
| 5.1.2 Customer Focus | Management should prove leadership and commitment to focus on consumers by ensuring products and services are in compliance with regulatory and legal requirements and focusing on customer satisfaction and the risks and opportunities in this regard are properly defined. | Product Backlog creation and grooming |
| 5.3 Organizational Roles and Responsibilities | Management should delegate responsibilities and rights of the respective roles of QMS appropriate employees, they are communicated and understood within the organization to make sure compliance of QMS with the standard its entirely changes adequacy of the processes on planned statistical products and services and reporting of performance. | Different roles in Scrum and their responsibilities   * Enterprise Management * Product Owner * Scrum Master * Development Team * Others etc. |
| 6.1 Actions to address risks and opportunities | When planning the QMS, it must determine the risks and opportunities particularities of the organization and the needs and expectations of the stakeholders to ensure that QMS will be able to achieve its purpose. Actions taken to address the risks and opportunities must be proportional to the potential impact on the relevance of statistical products and services. | Following could be the tools and techniques to address risks and opportunities in planning phase:   * Root cause analysis * Why –why analysis * SWOT analysis * 7 quality tools * Sprint retrospective * Product Backlog grooming |
| 7.4 Communication | We need to define procedures for internal and external communication on QMS. This includes WHAT,WHEN,WITH,HOW, WHO will communicate. | This can be done through following:   * Daily Scrum/ Standup * Product Backlog grooming * Sprint Review * Sprint Retrospective * CS Communication |
| 8.1 Operational Planning and Control | Processes for producing statistical products and services must be planned, implemented and controlled in a manner that ensures compliance with the consumer/ customer and with legal and regularity requirements. | This can be done through following:   * Product Roadmap * Product Backlog creation * Sprint Planning * Sprint Backlog creation * User stories * Calendars/ Schedules |
| 8.2.1 Customer Communication | Communication with users of statistical products and services includes provision of information related to the product and service possessing application requests or contract changes them feedback after delivery of the finished product or service control identity of the user. | Service level agreements  Customer feedback (NPS Score)  Daily scrum/ standup meeting |
| 8.2.2 Determining of requirements for products and services | When defining the requirements for statistical products and services that will be offered to users/customers must ensure compliance with regulatory and legal requirements and can actually be made available to consumers on request. | User stories with acceptance criteria |
| 8.2.3 Review of requirements for products and services | Must be reviewed before delivery of finished products and service to the customer, taking into account the requirements set by him, legal and regulatory requirements. | This can be done through following:   * Architectural and business review of user stories before estimation. * Product owner review |
| 8.3.2 Design and development planning | Must provide the nature, duration and complexity of the activities of statistical research activities needed to verify the results and validation activities, the participants in the process of producing statistical products, resources, communication with stakeholders, ways of documenting process. | This can be done through following:   * Sprint planning * Estimation of user stories * Story points assigned |
| 8.3.3 Design and development inputs | It need to ensure compliance and to input information with the project targets contradictions between the project and the design of the entrance to be addressed and information on the design and development at the entrance to document. | This can be done through following:   * User stories with acceptance criteria * Product owner review |
| 8.3.4 Design and development controls | Must implement process control design and implementation, to ensure that we achieve the results that are defined that they meet the requirements that the outputs of design and development meet the requirements of entrance. Verification and validation have different purposes and can be performed alone in combination. | This can be done through following:   * Sprint retrospective * Testing sprint execution * UAT sprint execution |
| 8.3.5 Design and development outputs | We need to ensure that the finished product or service with the design of statistical survey and defined early requirements and acceptance criteria are applied and appropriate procedures for monitoring and measuring the eligibility criteria. These procedures are documented. | This can be done through following:   * Sprint happiness survey * Sprint review |
| 8.3.6 Design and development changes | We need to identify, monitor and control changes made during and after the design and development of statistical product and services in order to ensure that no adverse impact on compliance exists. | This can be done through following:   * Change management * Sprint planning * Sprint review |
| 8.6 Release of products and services | It must be carried out pre-planned measures in various phases and sub-processes of production of statistical information in order to verify that the requirements for products and services have been completed. The release of statistical products and services should not be done until you have satisfactorily completed the planned measures. | This can be done through following:   * Sprint review * Daily scrum/ standup * Sprint planning * Burn down charts |
| 8.7 Control of nonconforming outputs | We need to take appropriate action based on the nature of non-compliance and its impact on product requirements and service, whether it’s found during or after their submission. Compliance is checked and when a correction of incorrect outputs. | This can be done through following:   * Testing * Sprint review |
| 9.1.2 Customer satisfaction | We need to measure the degree of satisfaction of the needs and expectation of users of statistical produces and services through variety of methods for obtaining feedback based on the type of users. | This can be done through following:   * Sprint review * Net promote score(NPS) * Customer feedback |
| 9.1.3 Analysis and evaluation | We need to analyze the information obtained from monitoring and measuring compliance, the results of which will be used to evaluate not only the compliance of the products and services but also for the satisfaction of customers, the effectiveness of the QMS, action taken to deal with risks and opportunities of the obligation of respondents and the need to improve the QMS. | This can be done through following:   * Sprint review * Burndown charts * Scrum team velocity trends * Sprint retrospective * Sprint quality metrics trends * Sprint productivity metrics trends * Sprint value metrics trends * Happiness survey trends |
| 10.2 Nonconformity and corrective action | When a discrepancy including complaints from customers must be taken to control and correction deal with the consequences, for the cause of discrepancy through review and analysis of the discrepancy determine the cause of this update of risk and opportunities or if the necessary changes in the QMS. | This can be done through following:   * Root cause analysis * Why –why analysis/FMEA * SWOT analysis * 7 quality tools * Sprint retrospective |
| 10.3 Continual improvement | We need to continuously improve the QMS with a view to its sustainability, adequacy and effectiveness. Leading for this purpose are the results of analysis and evaluation, this determining whether the is a need or an opportunity for improvement. | * Sprint retrospective * Sprint review * Introduction to new tools and techniques |

## Overall challenge’s in QMS implementation

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| **ISO Requirement** | **Challenges** | **Solution** |
| Documented process and Process conformance  ISO 9001’s need for documentation of all process steps  Agile development’s reluctance of excessive document production, taking resources and focus away from code development  Document reviews and audits i.e. proof towards conformance  All reports of non-conformance both for product and for process shall be reported and must lead to corrective actions | Problems pertaining to ISO 9001 and agile development stems from the fact that:   * Agile development focus on making code – not documents * ISO 9001 uses documents to establish confidence in  1. Process conformance 2. Product quality | We will need documents from:   * The initial planning activities * Definition of measurable quality objectives * All activities for use as proof of conformance * High level and low level design * Reviews of each iteration |

### References:

<https://www.slideshare.net/ssuserc9ff80/relationship-between-iso-90012015-and-scrum-practices-in-the-production-and-provision-of-statistical-products-and-services>

<https://suyati.com/blog/mapping-iso-9001-scrum-practices/>

<https://www.youtube.com/watch?v=Y6Eto2-XPGI>