



Task Based Quality Management System Framework



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MANAGEMENT SUMMARY

This whitepaper explains the ImQuSo Task Based Quality Management System Framework.

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1 Purpose

This whitepaper gives a brief explanation of the ImQuSo Task based Quality Management System Framework(TbQMS).

2 Quality Management System (QMS) description

A QMS describes the way of working of an organisation on organisational and (optionally) on technical level. Sometimes it is called a development or organisation manual. It can consist of descriptions like: Process, Procedure, Way Of Working, Standard Operation Instruction, Manuals, Guidelines, etc. but can contain also templates, tools, etc.

Most QMSes are document based. This means the lowest information unit is a complete document.

This leads to the following limitations:

- Hard to find a specific document (in large QMS archives)
- For a simple task lookup you have to read the entire document
- Document grouping is mostly process cluster based.
Additional views on the document need to be manually created and maintained.
- Skilled people use the same document as novice users.
- Difficult to create/maintain “search engines” on the QMS content
- Hard to maintain Baselined versions for (long lead time) project that do not want to update the project documentation for QMS changes.
And sometimes need to for e.g. safety updates.



3 What is a Task Based QMS

In the TbQMS framework the lowest information unit is a Task.

Tasks are combined into a Paragraph.

Paragraphs are combined into a Chapter.

Chapters are combined into a Document.

Documents are combined into a TbQMS.

A Task, Paragraph, Chapter, and Document have (minimal) a name, a list of applicable project types and a 'Descriptive Text'. There can be more instances of the same 'Descriptive Text' with more or less information based on the Skill level (To be selected by the reader). Additional text blocks can be added!

Additionally for each Task is defined:

- a "Responsibility assignment matrix"(TRACI)
- Input and Output documents (quality records).
- Reference to Norms, standards, etc.
- Link to applicable project lifecycle phases

One can combine any number of texts into a document without the use of Tasks but then you lose a lot of the benefits.

Most organisations execute their work in projects and they have several project types like, Maintenance projects, Development projects, and e.g. feasibility studies. Each of these project types need a different type of management control and can have different project lifecycle phases.

4 Benefits of Task Based QMS Framework

This Task based QMS approach has a number of benefits that is an answer to the limitations of common QMSes as described earlier.

4.1 Views in the TbQMS Framework

The accessibility of the TbQMS documents is very important. Many QMSes are organised from a quality point of view and are not intuitive to use for e.g. a developer.

So to accommodate the usability we want to support different views on the QMS:

- Norm/ standard based
E.g. ISO9000, CMMI, ISO15504(SPICE), etc.
This is a view with documents grouped per process cluster or show which tasks are related to a process cluster, norm or standard.
- Lifecycle based
This is a timeline view where one can find a document based on the



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execution progress of the project. Project lifecycle phase is also another filter to limit the document lists view.

- **Predefined Project Type Tailoring**
Makes distinction between different types of projects.
This permits generation of project specific Configuration Items List, project lifecycle phase entry/exit criteria checklists, but also suppression of not relevant QMS document and/or document text blocks.
- **Role view**
This is a view based on the activities a role has to do.
This is implemented with a limited (role) view display of a document content. But also to search for a role involvement in documents.
- **Experience View**
Show a text amount that is enough for the skill level of the viewer.
So an Apprentice will see more text than an Expert in the same document.
A Guru (top skilled) will only see content headers and TRACI matrix.
(Skill levels are free definable at setup.)
- **TbQMS Baselines Views (Stable? Old versions)**
The data for the TbQMS data is baselined.
Mandatory updates for e.g. safety reasons are easily implemented on older baselines. The TbQMS has a user option to switch between different TbQMS (baselined) databases.

4.2 Search options for the TbQMS Framework

As all text blocks are stored in a database the TbQMS search feature has several specific search options like e.g.:

- Find documents that refer to a specific document.
E.g. Show all documents that refer to the risk management document
- Look for documents of a specific/partial version/status.
- Look for similar document types.
E.g. show all “work Instruction” documents
- Look for a specific/partial text in the document title
- Look for a specific/partial text in the document content
- Look for text or title exclusively in Chapter, Paragraph or Task.

4.3 Maintenance of the TbQMS Data

The data for the TbQMS database is stored in spreadsheet files with simple user friendly syntax. A generator with a user data entry check is used to fill an empty database with all TbQMS data.

The code sources are intended to be stored in a Configuration Management System and so the entire TbQMS data is baselined as the generator can work on any source baseline.



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The generator has a force (renew) option for individual documents and for all documents.

Development TbQMS versions for document updates can easily be created as are mandatory (safety) updates of older baselines.

Some settings need to be defined at initial setup, others can be modified on the fly.

For maintenance there are 3 options:

- Check
Check the content of the available source files.
- Init
Create all tables in an empty database and add some “lookup data” like e.g. states, document types, skill levels, etc..
- Generate
Fill the database with data from the available source files

5 User commands in the TbQMS Framework

The viewer uses a simple frontend with these menu options.

- Welcome
Welcome page with latest news, etc.
- Doclist (with document selection)
Show document overview and search in all documents.
- Search (with document selection)
List chapters, paragraphs or tasks based on: statuses, doc types, roles, skill levels, text, project type applicability, etc., etc.
- Refs
Additional information views like:
 - Project type specific deliverable lists,
 - Project type specific lifecycle phase information
Like: Applicable documents, involved roles, phase entry and exit quality records
 - Lookup tables for e.g. States, Quality record types, Roles, etc.
 - Abbreviation
Show a list of Terms, Abbreviation, Definitions, etc used in the TbQMS
 - Additional available tools.
- PP
Set personal preferences (skill level and project type).
- About
Small text page with a description of this TbQMS Framework



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Selected skill level, project type and TbQMS baseline version selections are maintained during the active user session.

There are tools that are loosely/not related to the TbQMS

- “One File Template” tool
A tool to generate empty documents based on template selection.
See whitepaper: ImQuSo-TI-2010-004_WordPropertyTool
- MS Word document property tool
Tool to manage custom and standard MS Word document properties.
See whitepaper: ImQuSo-WP-2010-008_IMQuSo-OFT-Leaflet
- Document number generator
A tool to generate unique document numbers/IDs and also stores information on generated document numbers/IDs.
Can become part of the TbQMS menu.

6 What is NOT implemented in the TbQMS Framework

As always some decisions have to be made regarding the implementation:

- User Access control
Only the backend (maintenance) is protected with (setup definable) password.
The frontend does only data retrieval, is expected to be accessible for all employees and resides on the company intranet.

7 Technical requirements for the TbQMS Framework

The software is written in PHP and uses a MySQLi database.

I assume that it will run on any web server that support PHP (5.0+) and MySQLi.

8 QMS View Wizard

December 2014 I have released a product called: QMS View Wizard that is based on the concept of the Task Based QMS framework as described in this document. It has all (and much more) features that are described here.

More information and a live demo are available on www.qmsviewwizard.com



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