Advantages of the APIS IQ-Tools

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Introduction

We are often asked the question: "What advantages does the APIS IQ-Software offer over rival products? "

We can only provide an honest answer if we look at the latest version of the APIS IQ-Software and compare it to another selected solution - but it is also vital that we understand the particular requirements scenario of the customer. Are we looking at the short-term, medium-term or long-term advantages? Are we focussing on strategic advantages or conceptual advantages?

The purpose of this document is to highlight the main features of the APIS IQ-Software on the basis of the concepts which can be realised. In each specific case, the reader needs to check which features are offered by the competitor software and how they fare in comparison.

If you have any questions relating to the concepts described here, you feel that something is missing or you think that the competitor product may be superior in one or more specific areas, please get in touch with us and we will help you to answer your questions:

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Your APIS team

Advantages

All of the properties of the APIS IQ-Tools can be derived from the concepts. The list below is divided into separate concepts, each of which is followed by the most important related information in the form of bullet points.

1. Integrated quality assurance (IQ)

- IQ-Tools support the following QM methods: Failure Mode and Effects (and Criticality) Analysis (FMEA / FMECA), Control Plan (CP), Process Flow Diagram (PFD), Design Review Based on Failure Mode (DRBFM), Management of Requirements (MORE), Mechatronics FMEA, Fault Tree Analysis (FTA) and Functional Safety (FS).

- The data belonging to a project are saved with no redundancy. This also applies to additional data like evaluation catalogues, graphical symbols and text catalogues. Unnecessary work is avoided; there is no risk of data inconsistency.

- Structure trees, function and error networks, translations and additional information like notes, links etc. are also an integral part of the stored data.

- Functionality which is not required can be hidden, e.g. in order to obtain exactly the functional range which is required for the FMEA.

- Statistics, deadline monitoring and other controlling options are integrated in all IQ-Tools.

2. Document-centred - working with files

- File name, storage location (= directory) and access rights are the same as for Office tools, e.g. MS Excel.

- Easy transportability of information (files, to-do-lists etc.), including via e-mail.

- The operating concept and user interface are analogous to other known tools, which maximises user-friendliness and minimises the length of induction periods.

- Problem-free installation and data management (data saving, version upgrades, data exchange).

- Avoidance of the waiting times incurred on central databases as a result of the mandatory requirement for conflict avoidance strategies, no nightmarish situations during installation, version upgrades and inconsistencies across the company or accidental changes.

3. FME data format

- The FME data format is optimised for Quality Engineering and enables fast working.

- Even exceptional demands can be realised without having to take into account limiting requirements and standards.

- The IQ-Software only requires a working operating system, no additional external (database) software. This avoids many problems, as the responsibility for correct operation remains in a single place.

4. Document structuring

- If the size of a project increases, it is possible to work with multiple "worksheets" (structures) in an FME file. This makes it possible to establish an ordered data structure.

- Structures (worksheets) can be protected.

- Export and import functions for structures enable distributed working and the integration of standards.

- If sub-areas of a project are very similar to each other then it is possible to work with structures which, although slightly altered, are still cohesive. These are known as variants.

5. Objects

- Only seven object types are required in order to prepare FMEAs. In addition, depending on the methodological requirements, there are dependencies and interconnections.

- Objects are used across the board for working. As the bulk of the software which is already available is also object-based, any existing knowledge relating to processing options can be immediately utilised. Any new knowledge which is gained can also be transferred to other software.

- Catalogues and forms are additional objects with the aid of which practical requirements for reuse and for QM documents are satisfied.

- Attributes for objects are an option for storing additional information.

6. Type & occurrence

- Standardised naming including translations via access to type catalogues.

- Efficient working during renaming, translation and generation of dependent objects.

- Subsequent merging with the aim of ensuring that the stored data are clearly laid out by means of terminology checks.

7. Anchoring (dependency) & inheritance

- Modules with secondary information.

- Different pieces of information which belong together logically are taken into account when reused, moved or deleted.

- Inheritance of properties, e.g. responsibilities, deadlines and numbers.

8. Linking (networks)

- Data modelling with interaction rules (cause - effect).

- Arbitrary number of levels.

- Reuse without redundancy.

- Cross-structural working.

9. Additional information

- Flexible approach to the documentation of additional information.

- Flexibility for searching & controlling.

- Management of information.

- Objects with jump marks and pictures.

10. Editors

- Specialised views with editing options.

- User-friendliness - operating concept is the same as for Office tools.

- Can be adapted to own requirements.

- Flexible, fast working.

- Quick filtering in many editors.

11. QM documents & reports

- QM documents as reports with own header data.

- Arbitrary number of reports.

- Direct working in the forms.

- Option for filtering within forms.

12. Administration data & Normal.fmt (template)

- Nothing is changed inadvertently.

- Clear and understandable analyses through integration of the evaluation catalogues etc. in the FME file.

- Corporate standards can be easily changed or reset.

- Option of copying document settings and administration data, from own table headings and headers/footers to address books.

13. Application windows & dialogues

- Standardised operating concept in the most important application windows, the personal desktop area and the data manager.

- The personal desktop area can be configured according to own requirements.

- Dialogues correspond to Windows standards; application windows reflect the expectations of users.

14. Reuse

- Redundancy-free data through linking instead of copying etc.

- Easy options for copying objects or sub-areas.

- Access to catalogues.

- Integration of modules with update capability.

- Variant concept.

- Identical information can be used in multiple reports.

15. Data exchange

- Support for the Windows clipboard enables the transfer of information within the IQ environment and also to and from other software tools.

- Reading and writing is possible in standard external formats.

- XML support in accordance with the requirements of renowned companies - read and write!

- Optionally it is also possible to save in the neutral XML(MSR) data format. As this format can also be read, this makes it possible to exchange data between systems.

16. Controlling

- Analysis tool with named, freely configurable query filters; also detailed AND, OR and XOR combinations.

- Exportable and importable query filters allow experts to be consulted.

- Company-wide controlling across all FME files.

- Sensitive areas can be excluded from controlling via operating system access rights.

17. Multilanguage support

- User interface and labels/inscriptions in several languages.

- Multilanguage capability for data.

- Reference language concept for minimised translation outlay.

- Also support for Unicode, e.g. CJK operating languages.

18. Access protection

- Safety via the operating system.

- No back doors or pitfalls.

- No additional work/outlay due to personnel and rights administration.

- Practical concept for internal access rights in documents.

- Special tools for unrestricted access up to attribute levels with rules.

19. Collaboration & simultaneous engineering

- Arbitrary numbers of partners can work simultaneously on the same project.

- No restrictions, as every partner has his own file.

- Clone files with complete project data.

- CI files (CI = Collaboration Interface) with interface information / blackbox views.

- Controlled merging of changes (= consolidation of clone files or CI files).

- Change release with comparison to an earlier version status.

20. Support from the CARM-Server

- The advantages of the document-centred approach are combined with the advantages of server functions.

- Step-by-step expandability of the tool environment is possible, initially without a server.

- The CARM-Server as the central instance also enables cross-site working with modules in different locations etc.

21. Support from the CARM-NG-Server

- Saving of small sub-quantities of information in a relational database with bidirectional data exchange.

- Editing possibility via a web interface for actions, deadlines and responsibilities.

- Functional safety area: calculation strategies for components in a central location.

22. Web publisher & printing of presentation materials.

- Easy to generate printed documents.

- Easy to generate static web pages.

23. Licence models and NLX

- Licence models: local, local with dongle, network floating concurrent user

- Network License Extension (NLX) for temporary loaning and quick program start.

24. Adaptation to standards

- Support for all functions employed by users based on VDA, ISO, DIN and AIAG standards

- Thousands of installations and users

- For an example of the new features available after a version upgrade go to
  http://www.apis.de/pub/docs/downloads/apis_iq_neuerungen_v6.pdf

Appendix

Further information is available for the above - the main source of information can be found on the Internet at http://www.apis.de.

Follow-up considerations

The APIS IQ-Tools offer a great number of advantages which can be presented either in full or in part and to a greater or lesser degree of detail. In order to provide a helpful reply to the question of what exactly the advantages associated with the APIS IQ-Tools are, it is really first necessary to understand the interests and level of knowledge of the customer. For example, the customer might be more interested in an installation with a floating licence, which only counts the users who are actually active, or the customer may feel that it is important to be able to switch without problems between the analysis methods FMEA and DRBFM.

Similarly, the question cannot be broken down into categorical statements of the type "What are the advantages of this holiday region?" or "What advantages does one particular vehicle type offer over others?". A holiday region is only an artificial construct which can be arbitrarily widened, moulded or transported. When considering a vehicle, compromises need to be made.

The situation is completely different with the APIS IQ-Tools; we are talking about software. The APIS IQ-Tools are the result of discussions with thousands of users and were formed on the basis of a development effort of several hundred years, and this means that it is, in principle, possible to satisfy any requirements relating to practical use. In some cases it will be necessary to work with organisational rules, for example whenever the user needs to document the release of an FMEA and archive the release status. With the chosen concepts and the flexibility of the tool, there is not just the one "golden path".

In most cases, the fact that an answer can be given to every question is more than satisfactory. To stick with the analogy of a holiday region: customers can have everything at once - snow-capped mountains, beaches with crystal-clear, warm water, interesting town centres with museums and theatres, and much, much more.

Risk matrix - occasional users - customised tools - up-to-dateness

We are now moving towards detailed questions of the type "Is there a risk matrix?" and to other types of question against the background of "The tool must not be too complicated - will occasional users be able to use it?". Here again, there are persuasive replies, although the explanation itself will then become slightly more complicated - after all, who is able to immediately grasp the difference between configurability and a customized tool? Configurability is supplied with every IQ-Tool, but in the case of a customized tool something has to be specified and purchased separately.

Even if it contains a large number of replies, as soon as it is published the documentation will no longer be complete. During the process of continuous development and improvement, new features are constantly being implemented, and queries raised by customers or other interested parties are fed back to the development department, where they are then taken into account.

File - database - matrix - web-enabled

Let us move away from the field of general considerations and think about terminology which may carry a burden of prejudice. The concepts "file", "database", "matrix" and "web-enabled" fall into this category.

The APIS IQ-Software is "document-centred". This means that it works with files in the same way as the well-established Microsoft Office tools, e.g. Word, Excel, Access and PowerPoint. Anyone who rejects this concept, preferring instead to enter texts only into a central database or to edit everything via a web browser (analogously to Wikipedia) needs to ask himself what the real motivation for this is.

The fundamental question about the concept also leads to a different approach when presenting the advantages of the APIS IQ-Software. Whereas the first point should be addressed by explaining that the requirement for a central database represents a certain need for protection, access to information, reporting etc., which can also be met by working with files, the second point should be addressed by emphasising the orientation towards providing a total carefree package, which is ostensibly one of the potential draws of a web-based solution. In many cases, past experiences have been of software which is complicated to install and look after - leading many to look for the simplest possible solution.

Level of detail - objectives

In individual situations, listing too many details can also have a negative effect on the decision process. It is preferable to list the three to five most important advantages - rather than explaining dozens of advantages of which it is not even clear whether they are suitable and required.

Finally, it is important to think about information which is meaningless and over-complicates the situation. If the customer has no clear understanding of concepts like "Matrix-FMEA" or "DRBFM', or is even looking for a consultant-based solution in the SAP environment, then the question is raised of the basic understanding of QM methodology and the objectives behind the use of the software.

The option should be taken into account of purchasing a tool which is selectively configured to meet specific requirements. For example, if the listing states that the APIS IQ-Software supports the QM methods FMEA, CP, PFD, DRBFM etc., then APIS will also offer a software package which only includes FMEA. In extreme cases, the functionality can be reduced to a partially editable FMEA form.