

Constructing a case for managing documents

If you want to manage technical documents in the construction industry, you would be best served by adopting dedicated Construction Engineering Document Management software than by using more generalised EDM solutions, according to TDOC, says David Chadwick

Whenever I review software, I look at the basic, underlying, aim of the application - why it was developed, what it was intended to do, how it sets about doing this, and whether it fulfils its aim in a manner most suited to its users. I take into account the fact that most software tools have arisen in direct response to the perceived needs of prospective users in all walks of life, as software developers generally grow their applications in response to their user's requests for additional functionality.

Quite often, however, the ambitions of the developers run beyond those of their users, and on occasion the new functionality built into the application actually begins to detract from the original, basic aims of the software.

This is perhaps most evident in the Document Management market. On paper, as it were, Document Management might seem a simple enough process, yet the DM market is burdened with a colossal amount of choice, ranging from manual filing systems and Excel spreadsheets to full blown, web-based Electronic Document Management solutions (If you care to look at the Cimtech website, you will find 500 potential suppliers of electronic document management solutions).

Now, whilst we are happy to promote the valuable contributions that EDM has made in terms of improved distribution and control of documents throughout and beyond an enterprise, there are many who believe that EDM is, by its very nature, unable to fully address the needs of the construction industry. Hence the widespread use of TDOC - a dedicated

Construction Engineering Management Document Control (CEMDC) solution. The developers of TDOC - which was first pioneered in the intensely technical document oriented domain of offshore oil exploration - argue that there are considerable differences between general and construction markets, and that CEMDC, through not attempting to be 'all things to all men', provides a more comprehensive and better defined solution to their market..

Their main contention is that CEMDC, and in this case TDOC, understands the different types of documents that it is handling, knows more about them, and can treat each type more effectively and in a more structured manner. It can classify the content of the documents and separate those that have revisions - requiring them to be accompanied by transmittal notes - from those that are of a more general nature, such as letters, reports etc. EDM, on the other hand, treats all documents the same, and will accept different versions of documents that should not be revised, such as letters and quotations.

WHAT DOCUMENT?

Unlike EDM, which stores all documents in dedicated repositories or servers, TDOC only holds pointers to documents. This gives it a significant advantage over EDM, one that is of particular importance to the construction industry. The information that TDOC holds about documents is key to their use, distribution and status. TDOC also holds all of the formal movement transactions of documents, both technical and

general, including revision levels for technical documents, and can search for documents using complex filtering criteria, allowing extremely complex reports to be compiled. EDM uses a simple 'find' facility for collecting manually generated documents that are expected to contain their historical information.

BUSINESS PROCESS

It all boils down to what documents are about, and why we want to share them in the first place. Technical documents are created to define an entity such as a building or part, and to pass information about it to someone else. These may be revised, re-issued and annotated - and they are issued for a reason.

The standard ISO 9000 requires a company to register all such documents, identifying the whereabouts of the original and also every copy of every revision of every technical document or general document, including those completed progressively by more than one party - enabling the status of a document to be determined at any given time. It also requires a company to manage the repositories of documents - and much else besides.

TDOC handles this by raising transmittal notes - a report of any action taken with a document - and recording the information as database transactions. This is done automatically, rather than having to raise them manually as you would with EDM, and is part of the technical document management process. This process is split into two groups. Own Documents are those that

Fig 1. Replies to an incoming RFI

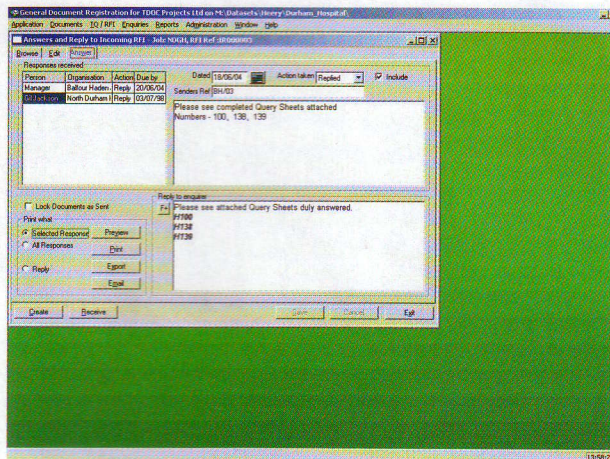
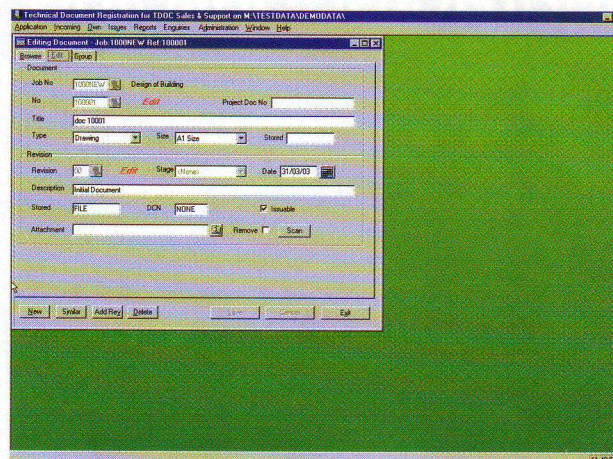


Fig 2. Revisioning Documents



the user has authority to create or amend, and Other Peoples Documents, where the user does not have authority to create or amend.

In addition to creation and revision, the Own Document user is responsible for registering the document, including references, titles, date of creation or revision, reason for changes, and authority for revisions. He is also responsible for storage and retrieval and issue to others (stating the reason why), for which he must obtain a receipt. Handling Other People's Documents takes a similar controlled path, only with the return of the document, if necessary, to the original source.

To facilitate such a controlled process, vital for ensuring that all of the processes laid out by ISO 9000 are fully met - and more importantly, that documents are not lost and engineers are always able to lay their hands on the correct document at the right time - the process has to be configured correctly. This is done by compiling registers of the sub-elements associated with the process, such as: people (organisation types, and job categories); contracts (and links between people and contracts); technical documents (Own and Other); revisions, related actions and notices; receipt of documents from others; standard distribution lists; list of transmittal notices

and a register of comments and status made by other people on any document issued by the user and returned by the same.

In addition to the above, technical document users must have a register of document groups and group types, a schedule of deliverables, and a workflow specification or event definition list. General documents require further information, including a register of recipients of copies of documents.

This means that TDOC holds all of the information it requires in its database for RFI's Instructions and Proposals, from which it can regenerate the documents - and it can also hold a link to the electronic representation of the document if it still exists. Even if documents are moved - where, perhaps, the link to it is lost and the document altered - because it can be held as a 'print file', TDOC can discern whether the linked document has been substituted by one that has different properties, and record it as a separate document.

You can't ask an EDM product who had what document, why, and did they do what they had to do? History, according to EDM, relates merely to 'revisions', and the solutions are principally aimed at non-CAD users. When it comes to View and Mark-up both EDM and CEMDC products have similar requirements. Typically, solutions from both markets will

require third party products, such as Rasterex and AutoView for viewing, red-lining and printing of documents.

SESSIONS

TDOC handles all of its distribution of technical documents using a rule-based matrix management facility called Sessions, which can be re-used, amended on the fly and automatically updated. For procurement management of technical documents the software uses SDRS methodology, which was first used in the oil industry (a solution not available to EDM products because they are based on a different type of database).

The technical aspects of TDOC need not concern users, however, as the user interface is both simple and very functional. Capable of being set up by the users themselves, rather than requiring the services of specialist installers, simple and direct paths lead the user through all of the steps required to manage each type of document. Every function is available through pull down menus, which open up input screens in which the lists of people, contracts, jobs, reasons, search keywords for reports, and all other data is available at the click of a button. It's a simple, neat and effective approach, and one that sums up TDOC as a whole.

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