



SOFTOLOGY

SAFIRE Workflow Technology

Product Description Version 4

1. Introduction.

Workflow may be defined as the automatic routing of work cases to the people or teams responsible for working on them. It is concerned with providing the information required to support each step of the business process cycle. Cases may be physically moved over the network or maintained in a single database with the appropriate users given access to the data at the required times.

Frequently, cases will be based on documents such as purchase invoices, application forms, complaint letters, stock control, safety records, order tracking, quality procedures and assurance ... the list is virtually endless ... and these documents may be scanned or originate from MS Office or other applications. Other cases may be, in effect, database records for customer or supplier information.

Regardless, the manual flow of documents and information in an organization is time consuming and prone to errors. Documents frequently get lost or shuffled to the bottom of in-baskets. Softology's **SAFIRE** is an enterprise-wide Workflow and Document Lifecycle Management solution. It alerts users to new cases via email, and will also notify managers if that work is not completed within the allotted time.

This document covers the functions, features, user and technical aspects of **SAFIRE**. In addition, it should be noted that Softology has an ambitious development strategy and the product is constantly evolving in line with our clients' needs. This document may consequently be superseded.



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2. Product Description.

2.1 Applications.

SAFIRE is an Enterprise Wide solution. It may be used to automate any business process for which there is a distinct set of steps, which occur in a predetermined order. Documents may be booked into a central repository, indexed, and then automatically routed to the appropriate staff using the **SAFIRE** workflow engine.

Our product includes a full suite of construction applications that enable the business process to be mapped using a workflow diagram tool. There is also a comprehensive form design package that enables us to quickly customize the information captured for a workflow item during its flow through the cycle. **SAFIRE** also comes with a powerful reporting tool to enable you to report on items that are currently in processes, or indeed items that have completed their workflow.

The facilities provided by the **SAFIRE** development kit typically result in a greatly accelerated business process automation development cycle when compared to traditional methods of software development.

2.2 User Interface.

SAFIRE is designed to use *Microsoft*® operating conventions, and is fully consistent with office systems such as Word. This enables users to quickly gain familiarity with the system after a minimum of training.

It is very important to realize that the **SAFIRE** user interface is highly customizable. The form that the user interacts with has all the standard windows components available (such as check boxes, drop down lists, edit boxes, etc). In addition, the list of work items in each users electronic in-tray can be sub-divided by a given data attribute (for example, supplier name).

2.3 Functionality.

Once the workflow has been designed, **SAFIRE** will:

- Route documents to the appropriate people (either individually or to a group in-tray).
- Send a copy of the documents to additional users (if required).
- Validate the data entry form using business rules.
- Alert users that new work has arrived via email (if the **SAFIRE** email server is active).
- Audit any work done to the workflow case.
- Allow free format notes to be associated with the case.
- View scanned documents using the built in Java viewer.
- Alert managers when work is overdue.
- Identify bottlenecks via the workflow diagram tool.



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2.4 Document acquisition.

SAFIRE can acquire documents from scanners or from MS Word or other office software products, or from Softology's own Electronic Document Management (EDM) system.

Documents may be scanned and a workflow started when they have been fully indexed. For example, some customers use this technique for purchase invoice approval. The invoice is booked in with a reference and additional information loaded from their accounts system database. Completion of the indexing process triggers the start of a workflow. This may be configured to run during out of office hours to optimize server usage.

Workflow cases can also exist without any scanned information. In such a case, just the data form flows through the process sequence to the appropriate users. For example, product code specification by a manufacturing company. The case is routed to the appropriate brand manager who enters the case dimensions, expected selling price, etc. It is then passed on to the head of purchasing who specifies the minimum order quantity. Next, the logistics controller specifies the warehouse where the product will be stored. Finally, it is passed to the systems manager who specifies the nominal code, sales code, and product code ready for the inhouse accounts system so that the product may be ordered and sold to customers.

SAFIRE will automatically send an email notifying users that new work has arrived for their attention. The email item contains a link that will launch the **SAFIRE** browser ready for use.

2.5 Searching and Browsing.

Commonly most EDM systems have the ability to search and browse documents. Using **SAFIRE**, you may search using the following methods:

- Documents can be located using any indexing information held against them using one of our general finder applications (either browser based or traditional plump client). You decide what fields to index during configuration, but they can be altered at a later date if your requirements change (added, removed, changed).
- Documents will be located in your **SAFIRE** in-tray if the workflow has determined that you should deal with them.
- **SAFIRE** has an API that allows you to bolt the software into existing systems and search for information.

2.6 Product licensing.

Softology Ltd. is the author and owner of the product, and grants licenses to its clients and partners. **SAFIRE** is licensed by concurrent user, together with a server license. We also have a revolutionary new licencing product that we have called the 'Fair Use Licence'. Please contact sales@softology.co.uk for further information.



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3. Technical Specifications.

3.1 System Installation and Configuration.

A major configuration step with any workflow product is the capturing of business rules (e.g. purchase invoices always go to Mary who then sends them to the appropriate staff except where the invoice is above £2000 when it will be sent to Joe). How long it takes to determine the business rules depends entirely on the organization concerned. We will require you to decide what information should be captured during the workflow by helping design your **SAFIRE** form. The final stage is to configure IIS on your intranet in order to grant remote users permission to view images, and also give them access to the **SAFIRE** login web page.

Access to the software is fairly immediate (providing the client machine has the Java runtime installed). Thin client design means that the user only has to point their browser at the **SAFIRE** login page in order to access their work, where they will be required to enter their username and password before they will be allowed to proceed. This software design methodology also lends itself to easy software updates, since **SAFIRE** is only installed on a server and not each individual client.

3.2 Server processes.

In order to utilize the **SAFIRE** workflow system, the following components will typically reside on your server:

- **SAFIRE** action processor engine to route work through your workflow(s).
- **SAFIRE** mailing service (responsible for sending email alerts to users).
- **SAFIRE** timeout engine for when work is overdue.
- Additional server processes that are customized to your organization. This could include an automated update of lookup information from an existing database, user information import, etc.

The **SAFIRE** action processor is run as a standard unattended windows service constantly in the background. The other processes are run via the Windows task scheduler, thus allowing you full control over when and how often they run.



3.3 The Workflow Diagram.

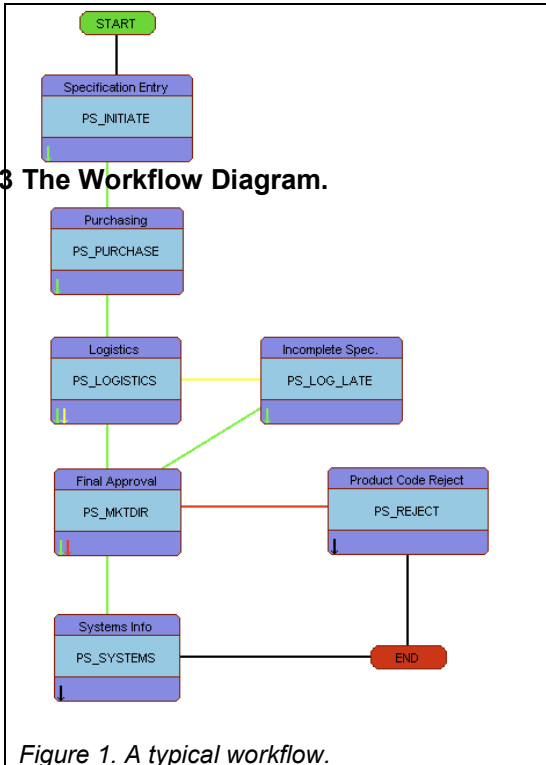


Figure 1. A typical workflow.

Figure 1 is taken from our workflow diagram tool. Each state (or stage) in the workflow is shown as a blue rectangle.

States are connected together by colored lines:

- Green signifies user acceptance.
- Rejected cases follow the red lines.
- Yellow is for timeout events.
- Black is for start and end routes.

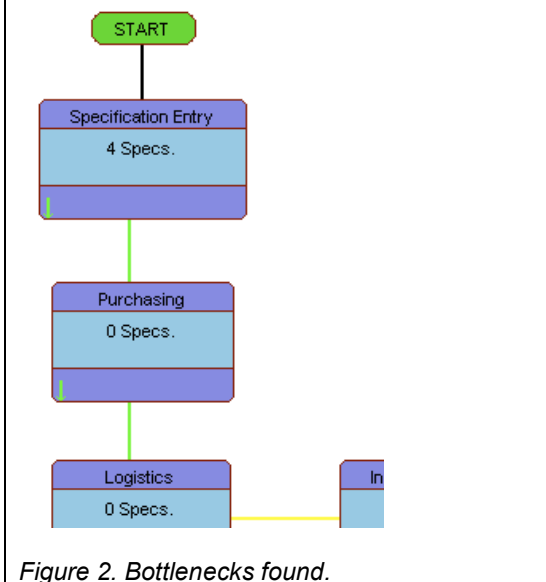


Figure 2. Bottlenecks found.

The diagram can also show the number of workflow cases at each given stage, which is useful for identifying bottlenecks and delays.

Cases at a given workflow stage can be displayed, and searched to identify who has the work.



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3.4 State customisation.

Figure 3. State property editor.

Above is the state editor built into the action process diagram tool. Each **SAFIRE** workflow is broadly similar in terms of the actions that connect states together. As mentioned earlier, users may accept an item, reject it, or do nothing, which may cause a timeout action to be triggered. The system architect decides who receives the work for a particular state. They may either select a specific user, or they can elect to utilize *JavaScript* (typically where a business rule decides the user). Scripts may be used for user selection, validation of user data entry, copying a case, or processing the case information before the user receives it.

The state editor also gives you access to email settings. Mail can be sent before the user receives the case (to alert them that work has arrived). It can also be sent after the case has been dealt with (to alert a manager that the work is now complete). Each mail item is fully customizable, and can include data items from the form that the user has filled in. Mail may be sent to several recipients.

This editor also gives access to timeout settings for the state. After a given number of days (working or cumulative) the system can alert managers and users to the fact that a workflow case is overdue. Timeouts may follow an escalation route.



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The screenshot shows the SAFIRE II Viewer application window. The main form is titled 'Invoice Approval : Invoice 1 type' and contains the following data:

| | | | | | | | |
|------------------|------------|------|--------------------------|-----------------|------------|----------------|-------|
| Internal Inv No. | 65341 | Type | | Invoice Date | 31/3/2005 | Invoice Amount | 12.47 |
| Supplier Name | SCOTT'S | | | VAT/Code | | | 0.00 |
| Sup. Inv. No. | 6694 | | | Net | | | 12.47 |
| Description | | | | Approved Amount | | | 0.00 |
| Comment | | | | Property | | | |
| Nominal Code | | | | Nominal Desc | | | |
| Approver 1 | ACCEPTUSER | | <input type="checkbox"/> | Approved On | 1970-01-01 | | |
| Approver 2 | ACCEPTUSER | | <input type="checkbox"/> | Approved On | 10/06/2005 | | |
| Approver 3 | ACCEPTUSER | | <input type="checkbox"/> | Approved On | 10/06/2005 | | |

Buttons at the bottom of the form include 'Auto Approve', 'Accept', 'Save', 'Reject', and 'Nominal Breakdown'. Below the form is a table with columns: 'BIG', 'Case(104938); P...', '1st', 'Nd', 'Priv', 'Last', 'Full', 'Width', 'Height', 'I', 'B', 'L', 'R', 'R0', 'R90', 'R180', 'R270'. The table content is mostly empty, with the first cell containing 'SCOTT'S CONTRACT SERVICES LTD. 65341'. Below the table is a text area containing contact information for Kingelagh 38 Althorpe Grove, Portsmouth, Hampshire, PO2 5XA, and Solihull Property Management Ltd, 15 Wood House, 10 Victors Way, Barnet.

Figure 4. Completed form made with the form designer.



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SAFIRE comes with a form designer that will enable you to design workflow forms containing all the usual windows controls (for example edit boxes, drop down lists, check boxes, etc). Selecting a component on the form displays the component property editor so that the database field name may be chosen, etc. Fields may also be identified as lookups. The form that you design will be shown whenever the case arrives in a workflow in-tray, with the appropriate scanned image below it (if there is one).

For each workflow step, the system architect will decide which fields are editable, visible, and/or required. Similar to state customization (see 3.4), each field can have *JavaScript* associated with it, and this executed when focus is gained, lost, or both. Where a user fails to enter a required field, it is highlighted in yellow, and the user prompted to fill it in before proceeding.

You may enter help 'hints' against each field on the form to give new users access to help where they need it. The hints may be switched on or off within the **SAFIRE** workflow browser application.



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3.5 Field Permissions.

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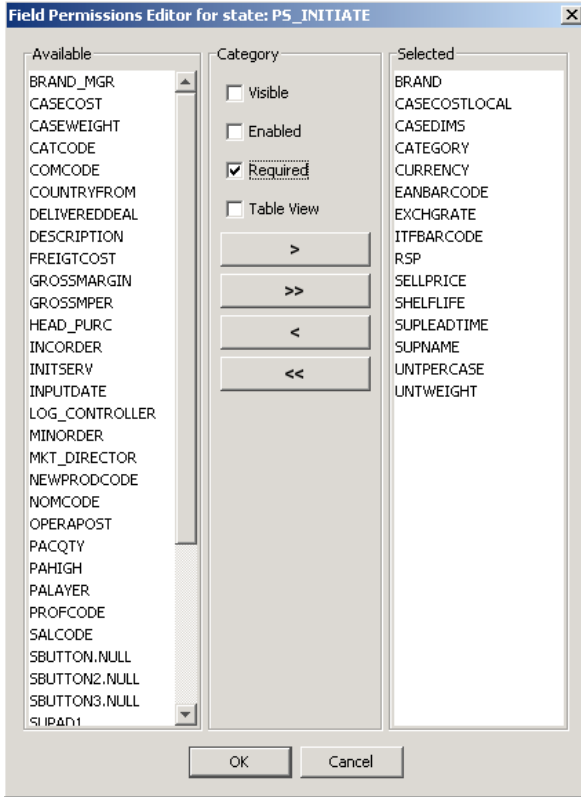


Figure 5. Field permissions for a state.



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For each step in the **SAFIRE** workflow, fields may be enabled or disabled. In addition, certain fields may be identified as being required. For example, in figure 5 above, a field called 'BRAND' has been identified as being required for this workflow stage. A user is prevented from approving a workflow item until all required fields have been filled in.

We have found that this mechanism is ideally suited to an entry/approval cycle where details are entered by one member of staff and then approved by an administrator.



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3.6 Timeouts and Escalations.

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Modify Message Template

1. Select message recipient(s)

Users: ACCEPTUSER, ADMINISTRATOR, ALISTAIR GAY, ANDY STRIDE, CHARLIE EDEN

Action: < >

Selected: [%BRAND_MGR%], [%SYS_MGR%]

Or: [%BRAND%] - Brand

2. Enter email subject line

Product Code Specification overdue

3. Write email message body

The logistics controller [%LOG_CONTROLLER%] has failed to specify the freight cost, etc. for product '[%DESCRIPTION%]'. Please investigate.

You may gain access to SAFIRE via <SAFIRE>this link</SAFIRE>.

4. Choose options

This template is for a timeout event

Timeout (Cumulative Days): 4 Working days. Timeout based on: [%INPUTDATE%]

Track: Normal Cases

Repeat Message Escalate state

Send Selected Send All Send Readers Copy email Form Event

Figure 6. Timeout customizations.



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When a document has remained at a particular state in the workflow for a given length of time, **SAFIRE** enables you to set a timeout in order to do something about it. In figure 6 above, where an item has not been dealt with four working days after the date contained in the field INPUTDATE, an email will be sent to the appropriate brand manager and system manager. The email is fully customizable, and in this case, the description field from the case has been included.

The timeout may also trigger a change in the state of the work item (an escalation), and this state too may also have its own timeout events. Timeouts can be set to repeat so that the user is reminded every few days to complete the item of work.



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3.7 Reminders.

Within the **SAFIRE** workflow browser, the user is able to set reminders against work in their in-tray. The reminders can be one of the following categories:

- To Do.
- Meeting.
- Phone Call.
- Task.

The screenshot below shows an example reminder:

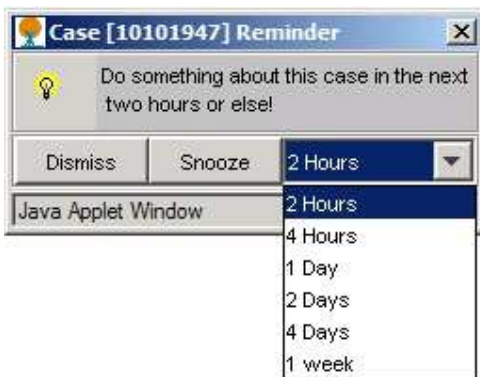


Figure 7. A timeout event occurs.

The staff member can choose to dismiss the reminder, or snooze it for a set time period, after which time the system will remind them again. Once the user has dealt with the item, all their reminders for that case are automatically removed.

This document is intended to provide users, consultants and developers with a view from the creators of e4DM and **SAFIRE**. It does not form the basis of any contractual agreement between Softology or its distributors and license holders.

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