

*Workflow Management Coalition**The Workflow Management Coalition Specification*

Workflow Management Coalition

Terminology &amp; Glossary

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# **1. INTRODUCTION**

## **1.1 Background**

The Workflow Management Coalition is a non profit organisation with the objectives of advancing the opportunities for the exploitation of workflow technology through the development of common terminology and standards. It has been recognised that all work flow management products have some common characteristics, enabling them potentially to achieve a level of interoperability through the use of common standards for various functions.

The WFM Coalition has been established to identify these functional areas and develop appropriate specifications for implementation in workflow products. Such specifications will enable interoperability between heterogeneous workflow products and improved integration of workflow applications with other IT

services such as electronic mail and document management, thereby improving the opportunities for the effective use of workflow technology within the IT market, to the benefit of both vendors and users of such technology.

## 1.2. Purpose

This document contains technical definitions for terms used in the workflow management coalition specifications and discussions. The definitions themselves will help in establishing a consistency in the use of terminology across the industry.

## 1.3. Scope

This document identifies the terminology used to describe the concepts and general structure of a workflow management system, its major functional components and their interfaces. It also provides a list of synonyms variously used within the industry as alternative terms to the preferred WfMC terminology. It may be read in conjunction with the Workflow Reference Model, which describes the architecture used by the WfMC within its standardisation programme.

## 1.4. Cross References

WfMC-TC-1003 Workflow Reference Model

WfMC-TC-1009 Workflow Client Application APIs (WAPI)

WfMC-TC-1012 Workflow Interoperability Specifications

WfMC-TC-1013 WAPI - Naming Conventions

WfMC-TC-1015 Workflow Audit Data Specifications

WfMC-TC-1016 Workflow Process Definition Interchange

## 1.5. Revision History

This issue (2.0) is a significant update of version 1, incorporating:

- \* standard background material describing the WfMC
- \* the standard WfMC document structure
- \* revised terminology in some areas to improve clarity
- \* new terminology in various areas
- \* an index of terms and cross references

## 2 - BASIC CONCEPTS

This section identifies basic concepts and terminology associated with workflow as a general topic.

### Workflow Glossary - Relationships between basic terminology

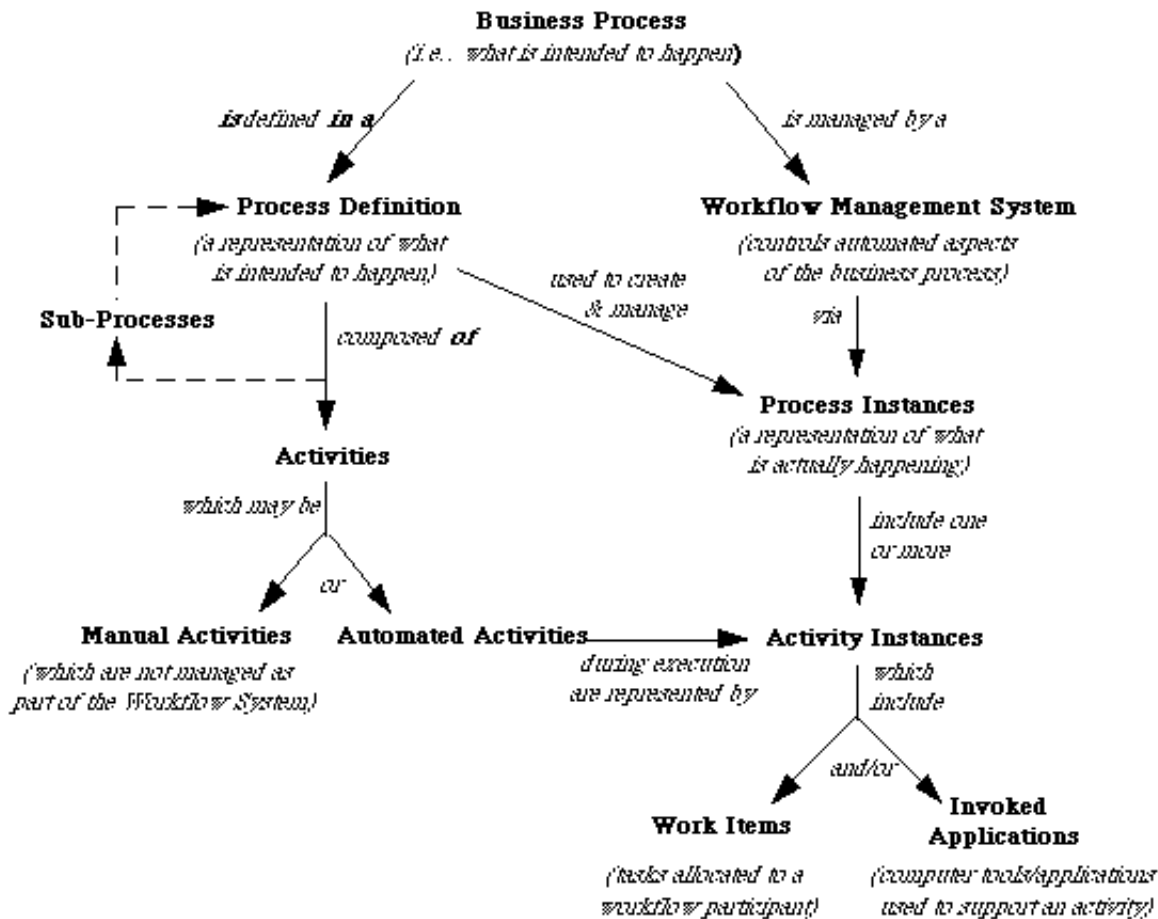


Figure 1.0 Relationships between basic terminology

## Workflow

### Definition

The automation of a business process, in whole or part, during which documents, information or tasks are passed from one participant to another for action, according to a set of procedural rules.

### Usage

\* The automation of a business process is defined within a **Process Definition**, which identifies the various process activities, procedural rules and associated control data used to manage the workflow during process

## enactment

- \* Many individual process instances may be operational during process enactment, each associated with a specific set of data relevant to that individual process instance (or workflow "Case")
- \* A loose distinction is sometimes drawn between production workflow, in which most of the procedural rules are defined in advance, and ad-hoc workflow, in which the procedural rules may be modified or created during the operation of the process.

## Synonyms

- \* Workflow Management
- \* Workflow Computing
- \* Case Management

# Workflow Management System

## Definition

A system that defines, creates and manages the execution of workflows through the use of software, running on one or more workflow engines, which is able to interpret the process definition, interact with workflow participants and, where required, invoke the use of IT tools and applications.

## Usage

[ A Workflow Management System consists of software components to store and interpret process definitions, create and manage workflow instances as they are executed, and control their interaction with workflow participants and applications.

- \* Such systems also typically provide administrative and supervisory functions, for example to allow work reassignment or escalation, plus audit and management information on the system overall or relating to individual process instances.

[ The WfMC have published an architectural Reference Model, describing the structure and interfaces of a Workflow Management System..

## Synonyms

- \* Workflow Automation
- \* Workflow Manager
- \* Workflow Computing System

- \* Case Management

## Business Process

### Definition

A set of one or more linked procedures or activities which collectively realise a business objective or policy goal, normally within the context of an organisational structure defining functional roles and relationships.

### Usage

\* A business process is typically associated with operational objectives and business relationships, for example an Insurance Claims Process, or Engineering Development Process. A process may be wholly contained within a single organisational unit or may span several different organisations, such as in a customer-supplier relationship.

[ A business process has defined conditions triggering its initiation in each new instance (e.g. the arrival of a claim) and defined outputs at its completion.

\* A business process may involve formal or relatively informal interactions between participants; its duration may also vary widely.

\* A business process may consist of automated activities, capable of workflow management, and/or manual activities, which lie outside the scope of workflow management.

See also: Process, Process Definition

### Synonyms

[ Process (colloquial)

## Process Definition

### Definition

The representation of a business process in a form which supports automated manipulation, such as modelling, or enactment by a workflow management system. The process definition consists of a network of activities and their relationships, criteria to indicate the start and termination of the process, and information about the individual activities, such as participants, associated IT applications and data, etc.

### Usage

\* The process definition results from work during the process definition mode. and may include both manual and workflow (automated) activities.

- \* The process definition may contain references to sub-processes, separately defined, which make up part of the overall process definition
- \* The WfMC Reference Model includes an interface for the import and export of Process Definitions

## Synonyms

- \* Model Definition
- \* Routing Definition
- \* Flow Diagram
- \* State Transition Diagram
- \* Flow Schematic
- \* Workflow Script
- \* Instruction Sheet Definition
- \* Case Type

## Activity

### Definition

A description of a piece of work that forms one logical step within a process. An activity may be a manual activity, which does not support computer automation, or a workflow (automated) activity. A workflow activity requires human and/or machine resources(s) to support process execution; where human resource is required an activity is allocated to a workflow participant.

### Usage

- \* A process definition generally consists of many process activities which are logically related in terms of their contribution to the overall realisation of the business process.
- \* An activity is typically the smallest unit of work which is scheduled by a workflow engine during process enactment (e.g. using transition and pre/post-conditions), although one activity may result in several work items being assigned (to a workflow participant)
- \* Wholly manual activities may form part of a business process and be included within its associated process definition, but do not form part of the automated workflow resulting from the computer supported execution of the process.
- \* An activity may therefore be categorised as "manual", or "automated". Within this document, which is written principally in the context of workflow management, the term is normally used to refer to an

automated activity.

## Synonyms

- \* Step
- \* Node
- \* Task
- \* Work Element
- \* Process Element
- \* Operation
- \* Instruction

(Each may be further described as a manual .... , or as an automated or workflow ....)

## Automated Activity

### Definition

An activity which is capable of computer automation using a workflow management system to manage the activity during execution of the business process of which it forms a part.

### Usage

During process execution, an automated (or workflow) activity is managed by the Workflow Management System (WMS). This may result in:

- \* an invoked application being activated directly by the workflow management system (with no workflow participant being involved)
- \* one or more work items being assigned to a workflow participant, with supporting tools or applications being invoked and managed by the workflow management system
- \* one or more work items being assigned for a workflow participant to process independently of the workflow management system, with the completion of the workitems being notified to the workflow management system by the workflow participant (within a workflow system these may sometimes be described as manually executed work items)

For other aspects of usage see *Activity*

## Synonyms

- \* Workflow Activity
- \* Activity (colloquial)

## Manual Activity

### Definition

An activity within a business process which is not capable of automation and hence lies outside the scope of a workflow management system. Such activities may be included within a process definition, for example to support modelling of the process, but do not form part of a resulting workflow.

### Usage

See Activity

### Synonyms

- \* Non-automated Activity
- \* Manual Step
- \* Human Task
- \* Manual Work

## Instance (as in Process or Activity Instance)

### Definition

The representation of a single enactment of a process, or activity within a process, including its associated data. Each instance represents a separate thread of execution [\[1\]](#) of the process or activity, which may be controlled independently and will have its own internal state and externally visible identity, which may be used as a handle, for example, to record or retrieve audit data relating to the individual enactment.

### Usage(Common)

[ A process or activity instance is created and managed by a workflow management system for each separate invocation of the process or activity.

## Process Instance

### Definition



The representation of a single enactment of a process. (See also general entry on Instance).

## Usage

- \* A process instance is created, managed and (eventually) terminated by a workflow management system, in accordance with the process definition.
- \* Each process instance represents one individual enactment of the process, using its own process instance data, and which is (normally) capable of independent control and audit as it progresses towards completion or termination. It represents the unit of work with respect to a business process which passes through a workflow management system (for example, the processing of one insurance claim, or the production of one engineering design).
- \* Each process instance exhibits **internal state**, which represents its progress towards completion and its status with respect to its constituent activities. (See Process State)

(Some business processes may never "complete" within a defined timescale in the accepted sense of the word, but achieve a protracted, persistent dormant state, which may require the process instance to be placed in an archive state, for example to support legal requirements on the maintenance of process data.)

## Synonyms

- \* Process Definition Instance
- \* Case
- \* Workflow Definition Instance
- \* Instruction Sheet Instance

## Activity Instance

### Definition

The representation of an activity within a (single) enactment of a process, i.e. within a process instance. (See also general entry on Instance)

### Usage

- \* An activity instance is created and managed by a workflow management system when required within the enactment of process, in accordance with the process definition.
- \* Each activity instance represents a single invocation of an activity, relates to exactly one process instance and uses the process instance data associated with the process instance. **Several activity instances may be associated with one process instance**, where parallel activities exist within the process, but one activity instance cannot be associated with more than one process instance.

- \* Each activity instance is normally capable of independent control and audit and exhibits internal state. (See Activity State)

## Synonyms

- \* Step Instance
- \* Node Instance
- \* Task Instance
- \* Work Element Instance

## Workflow Participant

### Definition

A resource which performs the work represented by a workflow activity instance. This work is normally manifested as one or more work items assigned to the workflow participant via the worklist.

### Usage

- \* [[Tau]]he term Workflow Participant is normally applied to a human resource but it could conceptually include machine based resources such as an intelligent agent.
- \* (Where an activity requires no human resource and is handled automatically by a computer application, the normal terminology for the machine based resource is Invoked Application.)
- \* A workflow participant may be identified directly within the business process definition, or (more normally) is identified by reference within the process definition to a role, which can then be filled by one or more of the resources available to the workflow system to operate in that role during process enactment.

## Synonyms

- \* Actor
- \* Agent
- \* Player
- \* User
- \* Role Player
- \* Work Performer

# Work Item

## Definition

The representation of the work to be processed (by a workflow participant) in the context of an activity within a process instance.

## Usage

\* An activity typically generates one or more work items which together constitute the task to be undertaken by the user (a workflow participant) within this activity

(In certain cases an activity may be completely handled by an invoked application which can operate without a workflow participant, in which case there may be no work item assignment.)

\* The work item(s) are normally presented to the user via a work list, which maintains details of the work items allocated to a user, and a worklist handler, which interacts with the worklist on the behalf of the user

\* The control and progression of work items rests with the worklist handler and the user, rather than the workflow engine, which is notified of workitem status (e.g. completion) via the worklist handler interface. (The WfMC WAPI interface includes standard API calls for this purpose.)

\* Tools or applications may be invoked to support the processing of a work item, or it may be processed independently by a workflow participant, with the workflow management system merely notified of the completion of particular work items

## Synonyms

- \* Work (e.g. document review, fill-in form)
- \* Work Object
- \* Work Queue Item
- \* Element
- \* Work Pool Item
- \* Task

# Worklist

## Definition

A list of work items associated with a given workflow participant (or in some cases with a group of workflow participants who may share a common worklist). The worklist forms part of the interface between a workflow

engine and the worklist handler

## Usage

- \* Generally, a worklist handler will request work items from a workflow engine in order to create such a list. This is sometimes done via a query mechanism.
- \* In some workflow management systems workitems may be placed in the worklist by a workflow engine for subsequently access and actioning by the worklist handler.

## Synonyms

- \* Work Queue
- \* In-Tray
- \* To-Do List

## Worklist Handler

### Definition

A software component that manages the interaction between the user (or group of users) and the worklist maintained by a workflow engine. It enables work items to be passed from the workflow management system to users and notifications of completion or other work status conditions to be passed between the user and the workflow management system.

### Usage

- \* A worklist handler may be vendor supplied as a component of the workflow management software, or may be developed as a standalone custom application. A worklist handler may communicate with several workflow systems, consolidating user work items into a single list of tasks for presentation to the user. This principle may be extended to include other external information sources such as mail in-tray items.
- \* Possible functions that may be performed by the worklist handler include:
  - \* Selecting a work item
  - \* Reassigning a work item
  - \* Notifying completion of a work item.
  - \* Invocation of a tool or client application as part of the work item processing
- \* The WfMC WAPI interface includes standard API calls for worklist handler communication with a workflow engine.

\*

\*

Synonyms

- \* WFM Front End
- \* WFM Application
- \* Workflow To-Do List Application
- \* Task Manager
- \* Active Work Performer

Workflow Glossary - Overview of Processes and Worklist Structures

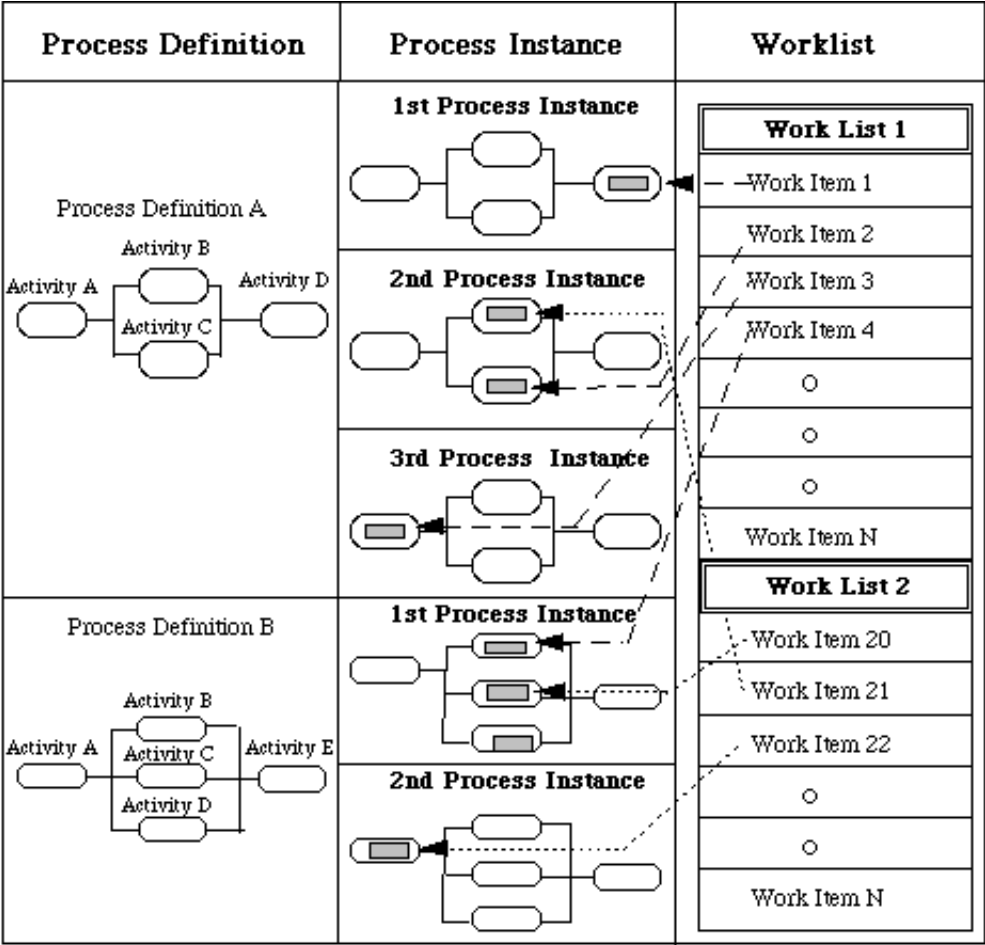


Figure 2.0 Showing relationships between key terminology

# Workflow Reference Model

## Definition

An architectural representation of a workflow management system, identifying the most important system interfaces, developed by the Workflow Management Coalition.

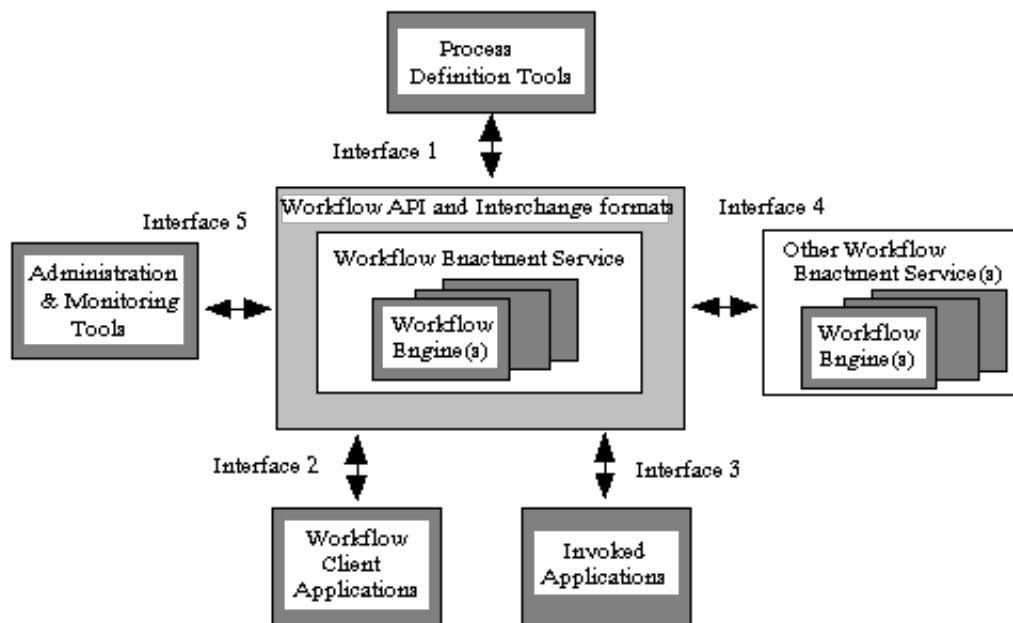
## Usage

The Reference Model provides the general architectural framework for the work of the WfMC. It identifies interfaces covering, broadly, five areas of functionality between a workflow management system and its environment.

- \* The import and export of process definitions
- \* Interaction with client applications and worklist handler software
- \* The invocation of software tools or applications
- \* Interoperability between different workflow management systems
- \* Administration and monitoring functions

## Synonyms

None



**Figure 4 - The Workflow Reference Model**

# WAPI

## Definition

WAPI is an abbreviation for **Workflow APIs and Interchange Formats**, published by the Workflow Management Coalition, and incorporating specifications to enable interoperability between different components of workflow management systems and applications

## Usage

WAPI includes

- \* A range of API calls to support functions between a workflow engine and applications or other system components
- \* Interchange formats and protocols to support interoperability between different workflow engines
- \* Formats for the exchange of information such as process definitions and audit data between a workflow engine and other external repositories.

## Synonyms

- \* Workflow API's
- \* Workflow Management System API's

# 3- PROCESS CONCEPTS & STRUCTURE

This section includes terminology used within the process definition and during process execution to describe the nature of the process flow and its interactions.

## Process Definition Mode

### Definition

The time period when manual and/or automated (workflow) descriptions of a process are defined and/or modified electronically.

### Usage

[ Process definitions are initially defined prior to workflow enactment, and may be

[ modified at a later date, or

[ modified during run time (usually under conditions of privilege or according to a particular user role).

## Synonyms

- \* Process Modelling
- \* Business Process Modelling
- \* Build Time

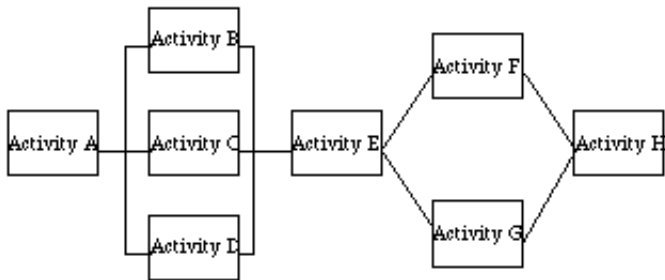
## Process

### Definition

A formalised view of a business process, represented as a co-ordinated (parallel and/or serial) set of process activities that are connected in order to achieve a common goal.

### Usage

[ Example: An eight activity process



## Synonyms

- \* Activity Network
- \* Directed Graph
- \* Petri Net
- \* Model
- \* Instruction Sheet

## Sub Process

### Definition



A process that is enacted or called from another (initiating) process (or sub process), and which forms part of the overall (initiating) process. Multiple levels of sub process may be supported.

## Usage

- \* A sub process is useful for defining reusable components within other processes
- \* A sub-process will have its own process definition
- \* The WfMC Interoperability scenarios identify various ways in which sub-processes may interact during workflow execution (e.g. nested sub-process, chained)

## Synonyms

- \* Subflow
- \* Sub Workflow

# Activity Block

## Definition

A set of activities within a process definition which share one or more common properties which cause the workflow management software to take certain actions with respect to the block in total.. For example a group of activities may be classified as a block if they require a common resource allocation policy.

## Usage

- \* A workflow system may support the concept of an activity block, which then initiates particular action by the workflow management system

## Synonyms

- \* Activity Set

# Deadline

## Definition

A time based scheduling constraint which requires that a certain activity (or work item) be completed by a certain time (the "deadline").

## Usage

- \* Activity scheduling by a workflow management system will attempt to meet deadline constraints set against particular activities.
- \* The deadline may be expressed as an attribute of the process definition or within workflow relevant data.
- \* Escalation procedures may be invoked if deadlines are not meant.

## Synonyms

- \* Completion Time

## Parallel Routing

### Definition

A segment of a process instance under enactment by a workflow management system, where two or more activity instances are executing in parallel within the workflow, giving rise to multiple threads of control.

### Usage

[ Example:

Once the form filling activity is complete the three sections of form X, sections A, B and C, are processed in parallel by the corresponding activities, Process Section A activity, Process Section B activity and Process Section C activity.

## Synonyms

- \* Parallel workflow processing
- \* Concurrent Processing

## Sequential Routing

### Definition

A segment of a process instance under enactment by a workflow management system, in which several activities are executed in sequence under a single thread of execution. (No -split or -join conditions occur during sequential routing.)

### Usage

[ Example:

A purchase order is processed in three consecutive activities.

## Synonyms

\* Serial Routing

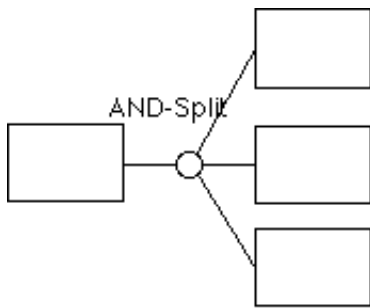
## AND-Split

### Definition

A point within the workflow where a single thread of control splits into two or more parallel activities.

### Usage

[ Example



## Synonyms

\* Split

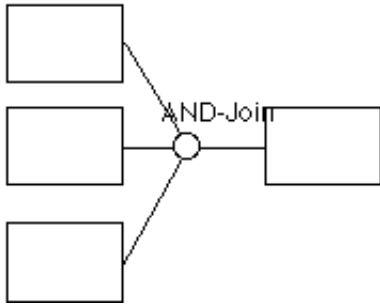
## AND-Join

### Definition

A point in the workflow where two or more parallel executing activities converge into a single common thread of control.

### Usage

[ Example



## Synonyms

- \* Join
- \* Rendezvous
- \* Synchronisation join

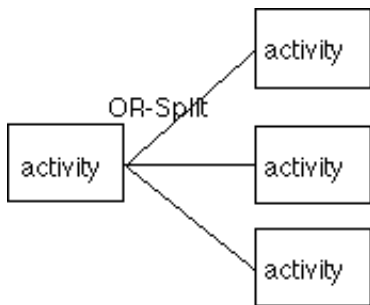
## OR-Split

### Definition

A point within the workflow where a single thread of control makes a decision upon which branch to take when encountered with multiple alternative workflow branches

### Usage

[ Example



## Synonyms

- \* Conditional Branching
- \* Conditional Routing
- \* Switch
- \* Branch

### Definition

## Usage

- \* Join
- \* [[Alpha]]synchronous join

## Iteration

### Definition

## Usage

```

graph LR
    A[activity] --> B[activity]
    B --> B
    B --> C[activity]
    
```

## Synonyms

- \* Workflow Loop
- \* While Loop
- \* Activity Block

## Pre-Condition

### Definition

A logical expression which may be evaluated by a workflow engine to decide whether a process instance or activity within a process instance may be started.

### Usage

- \* One or more pre-conditions may be defined as entry criteria to a particular activity or process instance.
- \* The pre-condition may refer to workflow relevant data within the expression and may also test system variables such as date or time. . It may also refer to an external event of some kind.
- \* The pre-conditions are defined within the process definition

## Synonyms

- \* Entry criteria
- \* Activity start rules

## Post-Condition

### Definition

A logical expression which may be evaluated by a workflow engine to decide whether a process instance or activity within a process instance is completed..

### Usage

- \* One or more post-conditions may be defined as completion criteria for a particular activity or process instance. Such conditions may form part of an iteration, in which one or more activities are repetitively executed until the defined post-condition(s) is/are met.
- \* The post-condition may refer to workflow relevant data within the expression and may also test system variables such as date or time. It may also refer to an external event of some kind.

- \* The post-conditions are defined within the process definition

## Synonyms

- \* Exit criteria
- \* Activity completion rules

## Transition Condition

### Definition

A logical expression which may be evaluated by a workflow engine to decide the sequence of activity execution within a process.

### Usage

- \* One or more navigation rules may be defined for evaluation at run time after an activity has started or completed, or following an external event of some kind
- \* The navigation rule may refer to workflow relevant data within the expression and may also test system variables such as date or time.
- \* Navigation rules are defined within the process definition
- \* Navigation rules identify the flow relationship between activities and are used to effect the desired sequence of activity execution, which may include parallel or sequential execution conditions.

(Note - Some workflow management systems may not define explicit transition conditions but use a combination of pre- and post-conditions to achieve an equivalent effect.)

## Synonyms

- \* Navigation Rule
- \* Routing condition
- \* Process Rule
- \* Transition Rule
- \* Business Process Rule
- \* Conditional Routing

# 4 - WIDER WORKFLOW CONCEPTS & TERMINOLOGY

This section includes terminology used within the wider context of workflow management systems.

## Workflow Glossary - Generic Workflow Product Structure

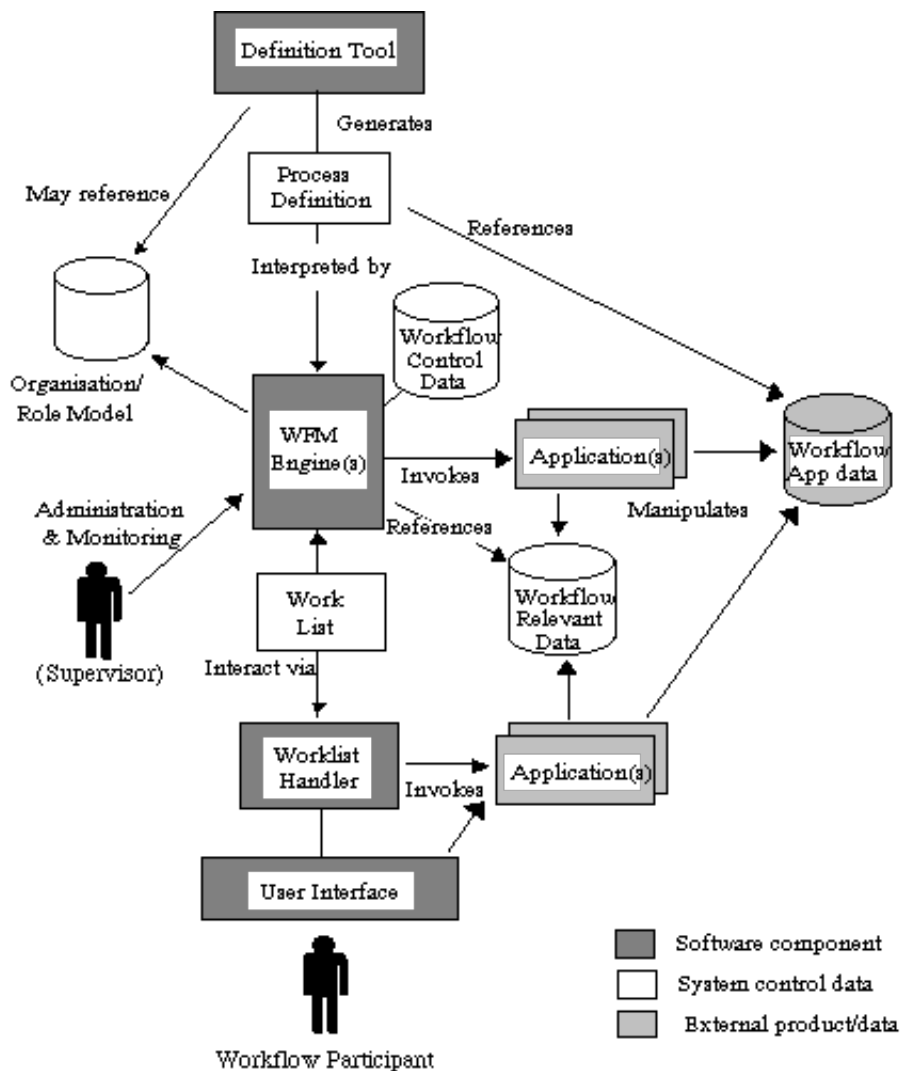


Fig 4 -Generic workflow product structure

## Workflow Application

### Definition

A general term for a software program that interacts with a workflow enactment service, handling part of the



processing required to support a particular activity (or activities).

## Usage

The Workflow Reference Model recognises two broad types of workflow application:

- \* Client Applications, which request facilities and services from a workflow engine
- \* Invoked Applications, which support the processing of particular activities, or work items, and are initiated by the workflow management system

## Synonyms

- \* Client Application
- \* Invoked Application
- \* Tool

# Client Application

## Definition

A client application is an application which interacts with a workflow engine, requesting facilities and services from the engine.

## Usage

- \* Client applications may interact with a workflow engine for a variety of reasons. Common functions which client application may perform are:
  - \* worklist handling
  - \* process instance initiation and other control functions (e.g. suspend/resume)
  - \* retrieval and manipulation of process definition data
  - \* various system administration functions (for example suspending the use of certain process definitions)
- \* The Workflow Reference Model includes an interface for client application interaction which supports APIs for a variety of the above functions.

## Synonyms

- \* Front-End Application

\* Client Program

## Invoked Application

### Definition

An invoked application is a workflow application that is invoked by the workflow management system to automate an activity, fully or in part, or to support a workflow participant in processing a workitem.

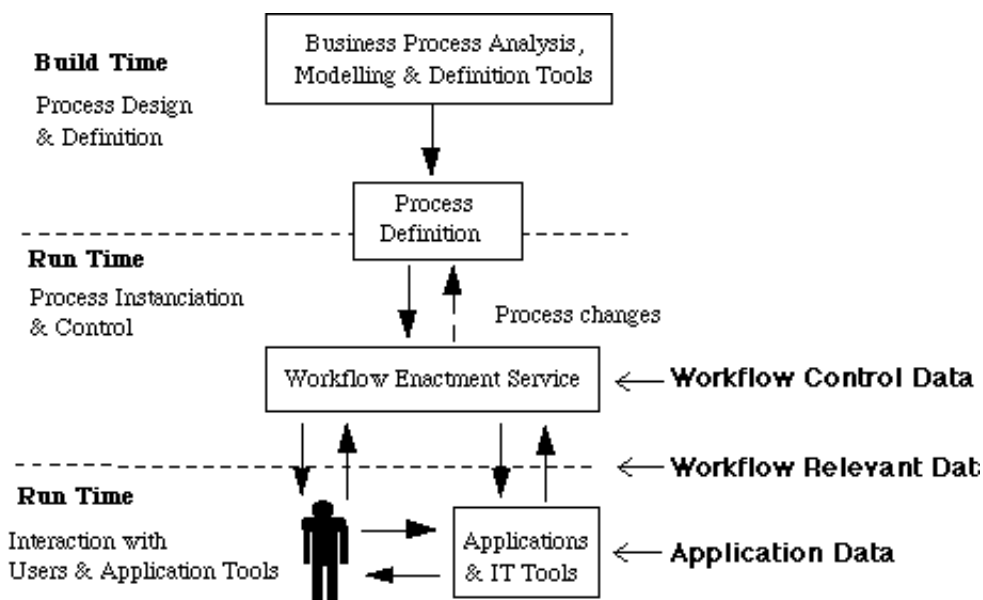
### Usage

- \* Application invocation may be a function of the workflow engine, and/or of the worklist handler.
- \* The application may be invoked directly by the workflow management system or may be invoked indirectly via an application agent (or "tool agent"). The application agent provides a general mechanism for application invocation independently from any native workflow management system facilities
- \* The Workflow Reference Model includes an interface for application invocation functions.

### Synonyms

- \* Tool
- \* Work Performer
- \* Application (colloquial)

## Workflow Glossary - Overview of Workflow Data Structures



## Figure 3.0 Types of Data in Workflow Management Systems:

# Application Data

## Definition

Data that is application specific and not accessible by the workflow management system.

## Usage

\* This is data that the workflow management system generally will never see. It is data that is strictly managed by the applications supporting the process instance. (Such data may become process relevant data if it is used by the Workflow Management System to determine a state change.)

## Synonyms

\* Application Case Data

# Workflow Relevant Data

## Definition

Data that is used by a Workflow Management System to determine the state transitions of a workflow instance, for example within pre- and post-conditions, transition conditions or workflow participant assignment.

## Usage

\* Workflow relevant data may be manipulated by workflow applications as well as by the workflow engine

\* Workflow relevant data may be made available to a subsequent activity or another process instance and thus may affect the choice of the next activity to be chosen (for example decision data and/or reference values to be passed between activities)

\* Data may be of two broad types

\* Typed - the structure of the data is implied by its type (typically a workflow management system will understand the structure of such data and may be able to process it)

\* Untyped - the workflow management system will not understand the data structure, but may pass the data (or a reference to the data) to workflow applications

## Synonyms

- \* Process flow data
- \* Case data

## Workflow Control Data

### Definition

Data that is managed by the Workflow Management System and/or a Workflow Engine. Such data is internal to the workflow management system and is not normally accessible to applications

### Usage

- \* Workflow control data represents the dynamic state of the workflow system and its process instances.
- \* Workflow control data examples include:
  - \* state information about each workflow instance
  - \* state information about each activity instance (active or inactive)
  - \* information on recovery and restart points within each process
  - \* etc..
  - \*
- \* The workflow control data may be written to persistent storage periodically to facilitate restart and recovery of the system after failure. It may also be used to derive audit data.

### Synonyms

- \* Workflow system data
- \* Workflow engine state data
- \* Workflow enactment service state data

## Process State

### Definition

A representation of the internal conditions defining the status of a process instance at a particular point in time. Most workflow management systems maintain such status information as part of their workflow control data.

## Usage

- \* The state of each process instance under enactment is maintained by the workflow management system. Different vendor systems have different ways of representing process state and may have their own set of state definitions
- \* As the execution of a process instance proceeds it follows a series of transitions between the various states which it may take. The complete set of process states for a process definition fully defines the internal behavior which its process instances may follow.
- \* The WfMC Reference Model identifies a number of common states which a process instance may take:
  - \* Initiated - the process instance has been created, but may not yet be running
  - \* Running - the process instance has started execution and one or more of its activities may be started
  - \* Active - one or more activities are started and activity instances exist (Further sub-states may be supported by particular implementations to record more detailed information about active activities.)
  - \* Suspended - the process instance is quiescent; no further activities are started until it is resumed
  - \* Complete - the process instance has achieved its completion conditions and any post-completion system activities such as audit logging are in progress.
  - \* Terminated - the execution of the process has been stopped (abnormally) due to error or user request.
  - \* Archived - the process instance has been placed in an indefinite archive state (but may be retrieved for process resumption - typically supported only for long-lived processes).
- \* The WAPI interface defines a number of calls to manipulate process state information, for example to interrogate process state or force a transition to a new state

## Synonyms

- \* Workflow state
- \* Model state

## Activity State

### Definition

A representation of the internal conditions defining the status of an activity instance at a particular point in time. Most workflow management systems maintain such status information as part of their workflow control data.

## Usage

- \* The state of each process instance under enactment is maintained by the workflow management system. Some systems extend this to maintain state information about each activity instance which has been created. Different vendor systems have different ways of representing activity state and may have their own set of state definitions
- \* The WfMC Reference Model identifies a number of common states which an activity instance may take:
- \* Inactive - the activity instance has been created, but may not yet been activated; no work item exists for that activity
- \* Active - one or more work items have been created and assigned for processing
- \* Suspended - the activity instance is quiescent; no further work items are started until it is resumed. (Note that some activities may not be suspendable.)
- \* Completed - the process instance has achieved its completion conditions and any post-completion system activities such as audit logging are in progress.

## Synonyms

- \* Step state

## State Transition

### Definition

A movement from one internal state (of a Process or Activity Instance) to another within a workflow, reflecting a change in the status of the workflow, for example initiating a particular activity. The state transition may be in response to an external event, a user API call, a routing decision taken by the workflow engine, etc.

### Usage

- \* A series of state transitions occurs as the workflow progresses its execution. Such transitions can be recorded by the workflow engine and presented as audit data.

## Synonyms

None

## Event

## Definition

An occurrence of a particular condition (which may be internal or external to the workflow system) which causes the workflow management software to take one or more actions. For example the arrival of a particular type of email message may cause the workflow system to start an instance of a specific process definition.

## Usage

\* A workflow system may react directly to particular events or the event may be monitored and processed by a (client) application, which then initiates action by the workflow system by API call or setting workflow relevant data, etc.

## Synonyms

\* Trigger

## Audit Data

### Definition

A historical record of the progress of a process instance from start to completion or termination. Such data normally incorporates information on the state transitions of the process instance

### Usage

\* Example information that may be collected as part of the historical record is date, time and type of work performed per state transition.

### Synonyms

\* Workflow History

\* Case History

\* History Repository

## Workflow Definition

### Definition

That part of the process definition which comprises the automatable activities.

### Usage

- \* Where a distinction is drawn between a process definition and those activities within it which are capable of automation, the term workflow definition is used for the latter.

## Synonyms

*see Process Definition*

# Process Execution

## Definition

The time period during which the process is operational, with process instances being created and managed.

## Usage

- \* The process execution phase may sometimes be differentiated from the process definition phase, during which the process structure and activities are defined. (In some systems, for example where much of the process definition is created dynamically during its execution, this distinction may be irrelevant.)

## Synonyms

- \* Process Enactment
- \* Run Time Operation
- \* Workflow Execution (strictly this refers only to the automated parts of process execution)

# Organizational Role

## Definition

A group of participants exhibiting a specific set of attributes, qualifications and/or skills.

## Usage

- \* Typically any of the participants within a particular organisational role group can undertake an activity or work-item requiring a resource with that set of attributes.
- \* Examples of an organisational role are:
  - \* Supervisor role
  - \* Insurance Underwriter role
  - \* Etc



- \* A workflow participant assumes a role given that he or she has the appropriate skill set.

## Synonyms

- \* Role
- \* User Groups
- \* Organisational Groups

## Organizational Model

### Definition

A model which represents organisational entities and their relationships; it may also incorporate a variety of attributes associated with the entities. Such a model may be realised in a directory or other form of database.

### Usage

- \* Such a model normally incorporates concepts such as hierarchy, authority, responsibilities and attributes associated with an organisational role. It may be referenced by a workflow management system as part of the mechanism by which process role is established.

## Synonyms

- \* Role Model
- \* Organisational Directory

## Process Role

### Definition

A mechanism that associates participants to a collection of workflow activity(s).

### Usage

- \* A workflow participant assumes a role to access and process work from a workflow management system.
- \* The role defines the context in which the user participates in a particular process or activity. The role often embraces organisational concepts such as structure and relationships, responsibility or authority, but may also refer to other attributes such as skill, location, value data, time or date, etc.

## Synonyms

- \* Role
- \* Activity Group
- \* Workflow Performer Definition

## Escalation

### Definition

A procedure (automated or manual) which is invoked if a particular constraint or condition is not met.

### Usage

- \* Escalation procedures typically involve a higher level of authority (*see Organisation Role*).

### Synonyms

None

## Constraint

### Definition

A condition (typically pertaining to activity/work selection and/or completion) which must be met during work processing; failure to meet a constraint may causes an exception condition or other defined procedure.

### Usage

- \* Constraints may be:
  - \* time based (*see deadline*)
  - \* resource based (e.g. consumes less than ...)
  - \* cost based (e.g. costs more than ...)

### Synonyms

- \* Controls

## Workflow Monitoring

## Definition

The ability to track and report on workflow events during workflow execution.

## Usage

- \* Workflow monitoring may be used, for example, by process owners to monitor the performance of a process instance during its execution.

## Synonyms

- \* Workflow Tracking

# Workflow Engine

## Definition

A software service or "engine" that provides the run time execution environment for a process instance.

## Usage

- \* The workflow engine provides operational functions to support the execution of (instances of) business processes, based on the process definitions.. These functions include:

- \*

- \* Interpretation of the process definition.

- \* Creation of process instances and management of their execution, including start / stop / suspend /resume, etc.

- \* Navigation between activities and the creation of appropriate work items for their processing

- \* Supervisory and management functions

- \* etc

- \* The workflow engine normally excludes functions such as worklist handling, which are user centred, although these may share a common platform with the engine software.

- \* One or more workflow engines make up a workflow domain; which provides an homogeneous process execution environment. A workflow enactment service provides support for the execution of specific workflows over one or more workflow engines, which may be in one or more separate domains.

- \* Two or more workflow engines may co-operate to share the execution of workflows. *See workflow interoperability*

## Synonyms

- \* Workflow Management Engine
- \* Case Processor

# Workflow Interoperability

## Definition

The ability for two or more Workflow Engines to communicate and work together to co-ordinate work.

## Usage

Workflow interoperability embraces several important concepts:

- \* The ability to make two or more workflow engines appear to provide a single workflow enactment service, with process execution shared between engines.
- \* Several different interoperability scenarios exist, describing alternative ways in which the execution of a process instance is shared between workflow engines.
- \* Hierarchic (Nested Subprocess)
- \* Connected Discrete (Chained)
- \* Connected Indiscrete (Peer-to-Peer)
- \* Parallel Synchronised

Further details can be found in the WfMC Workflow Reference Model and Interoperability specifications.

- \* The ability to interoperate between both homogeneous and heterogeneous workflow engines; possibly with different levels of functional capability.
- \* The Workflow Reference Model includes a functional interface (Interface 4) to support interoperability between (heterogeneous) workflow engines.

## Synonyms

- \* Interoperability

# Workflow Enactment Service

## Definition

A software service that may consist of one or more workflow engines in order to create, manage and execute particular workflow instances. Applications may interface to this service via the workflow application programming interface (part of WAPI).

## Usage

- \* A Workflow Enactment service consists of one or more workflow engines.
- \* A workflow enactment service may operate within a single (homogeneous) workflow domain, or using the facilities provided within the WfMC interoperability interface enactment may occur across engines within several (heterogeneous) domains.

## Synonyms

- \* Process Execution Environment

# Workflow Domain

## Definition

A workflow management service that consists of one or more workflow engines which are managed as an homogeneous unit, operating to a common administrative model.

## Usage

- \* A single workflow domain will normally exhibit common administrative functions, including:
  - \* common workflow naming (processes/activities)
  - \* common user naming
  - \* common interpretation of process definitions and state transitions
  - \* a common organisational model and roles
  - \* a common supervisory interface
  - \* common audit data
  - \* etc
- \* Typically a workflow domain is built from a common, homogeneous product set.
- \* The Workflow Reference Model identifies an interface (4) to enable workflow interoperability between workflow engines, such that an enactment service for particular processes can span more than one domain, and incorporate heterogeneous products.

## Synonyms

- \* Workflow Service

## Work Item Pool

### Definition

The representation of all work items accessible from a particular workflow engine

### Usage

- \* A Worklist Handler may (exceptionally) undertake operations requiring a global view of all available work items. The work item pool can meet this need.

## Synonyms

- \* Total Work Queue

## Administrator

### Definition

A workflow system user who has special privileges allowing various system set-up, control and management functions to be performed. In some systems these tasks may be shared between several administrators, each taking responsibility for separate areas of administration.

### Usage

- \* Administrative functions may include:
  - \* Set up and management of user names, passwords and roles
  - \* Assignment or re-assignment of work items
  - \* Processing exception conditions
  - \* Control of process definitions or versions thereof
  - \* Monitoring of work or process instance progress
  - \* System audit functions
  - \* etc

- \* Administrators may make use of specialised administrative tools.

## **Synonyms**

- \* Supervisor