

IST-2001-33127

SciX

Open, self organising repository for scientific
information exchange

D09: Overall architecture report

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EXECUTIVE SUMMARY:

This document details the results from a period of investigation into the logical architecture on which the SciX product will be based.

At its current stage of evolution the document consists of the results of the modelling. This modelling has been performed using the UML methodology and implemented using the Artisan™ tool.

The modelling has been performed using the UML methodology.

The Unified Modelling Language (UML) is a visual language that provides a way for people who analyse and design object-oriented systems to visualize, construct and document the components of software systems and to model the organizations that use such systems. UML represents the bringing together of three significant object-oriented diagramming notations and aspects of many other notations to produce a standard modelling language that represents best practice in the software development industry. UML is still evolving as a standard, and is likely to become an international standard accepted by the International Organization for Standardisation (ISO) in the near future.

The electronic publishing area is extremely fast moving, developing at a significant pace, particularly in the areas of inter-working. Therefore, a modular architecture is proposed for the SciX system, allowing functions to be included, left out, added, or replaced relatively easily in any particular implementation.

A widely accepted principle, particularly promoted in this arena by the OAi (Open Archives Initiative) and SPARC¹ (the Scholarly Publishing and Academic Resources Coalition), is the separation of data storage from service provision. It is also important that the repository itself (i.e. the minimum required functionality) is kept fairly simple, making it easy to put in place a repository initially to support the simple collection of articles.

Given the pace of change in electronic publishing, with developments taking place through a range of initiatives, including the OAi, SPARC, and various development efforts such as eprints.org, DSpace (MIT), and CDSWare (CERN Document Server). It will be important to be able to interact with these and similar or related systems in the future as this will be an important factor in the success of any online journal hosted on a SciX server. This implies a separation between the repository implementation and the means of accessing the repository, with possibly alternative access interfaces available in the future.

The models described herein are likely to be expanded in later versions to include the requirements, which are identified as the project progresses.

It should be noted that the design is intended to be modular and technology neutral.

RELEASE HISTORY

date	changes
22.7.2002	Outline document
23.9.2002	First draft
6.11.2002	Version 1.0 released

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1. INTRODUCTION

This document is Deliverable 09 of the SciX project. Its purpose is to provide a logical design of the SciX product.

The current version of the model has been largely based on the IDEF0 diagrams produced by Bo-Christer Bjork of Hanken, which are fully documented in Deliverable 01 of the SciX project.

Further input has been derived from the project meeting held in Helsinki on 23-24 September 2002 and notes from Gudni Gudnason of IBRI.

2. ARCHITECTURAL PRINCIPLES

This section describes a number of “architectural principles” that would provide advantages if applied to the logical architecture of the software supporting the SciX system. Some of these principles may not be satisfied immediately, but it is important that the architecture of the system is able to accommodate them in the future. In the following, the term “separation” should be taken to mean logical separation in software terms rather than necessarily physical separation.

The electronic publishing area is extremely fast moving, developing at a significant pace, particularly in the areas of inter-working. Therefore, a modular architecture is proposed for the SciX system, allowing functions to be included, left out, added, or replaced relatively easily in any particular implementation.

A widely accepted principle, particularly promoted in this arena by the OAi (Open Archives Initiative) and SPARC¹ (the Scholarly Publishing and Academic Resources Coalition), is the separation of data storage from service provision. It is also important that the repository itself (i.e. the minimum required functionality) is kept fairly simple, making it easy to put in place a repository initially to support the simple collection of articles.

From an academic point of view, the primary purpose of a journal is to validate, or certify, the research quality of a research publication in relation to its usefulness to a particular scientific community (or communities). This certification is presented in the form of a journal “brand”, and is based on the credibility of its editorial board. In addition, publishers of conventional journals address issues such as editorial quality (sometimes), distribution (or access), establishment of priority (date of submission and publication), storage and archiving (through submission to major libraries). It has been pointed out¹ that improvements may be made in the scientific publishing process if these logical elements were separated from one another.

An attractive publishing model, which is being promoted quite widely, is one in which authors submit their papers to an institutional “archive” (i.e. repository) that acts as the primary location for the article. In this situation, it will be necessary for a journal to link to another repository, or to retrieve the article and/or metadata from that repository. If this is to be accommodated, there will need to be a separation between the journal support and repository support. In this model, it will be important to take steps to ensure the authenticity of refereed articles. This may be done by taking a copy of the article, or it could be done very effectively through the use of digital signature using PKI (Public Key Infrastructure).

Given the pace of change in electronic publishing, with developments taking place through a range of initiatives, including the OAi, SPARC, and various development efforts such as eprints.org, DSpace (MIT), and CDSWare (CERN Document Server). It will be important to be able to interact with these and similar or related systems in the future as this will be an

¹ See for example *The SPARC White Paper*, SPARC, 2001 (<http://www.arl.org/sparc/resources/whitepaper.pdf>). Also *Gaining Independence through Institutional Repositories*, Alison Buckholtz, 2nd Workshop on the Open Archives Initiative (OAI), CERN, 2002 (at <http://documents.cern.ch/AGE/current/fullAgenda.php?ida=a02333>)

important factor in the success of any online journal hosted on a SciX server. This implies a separation between the repository implementation and the means of accessing the repository, with possibly alternative access interfaces available in the future.

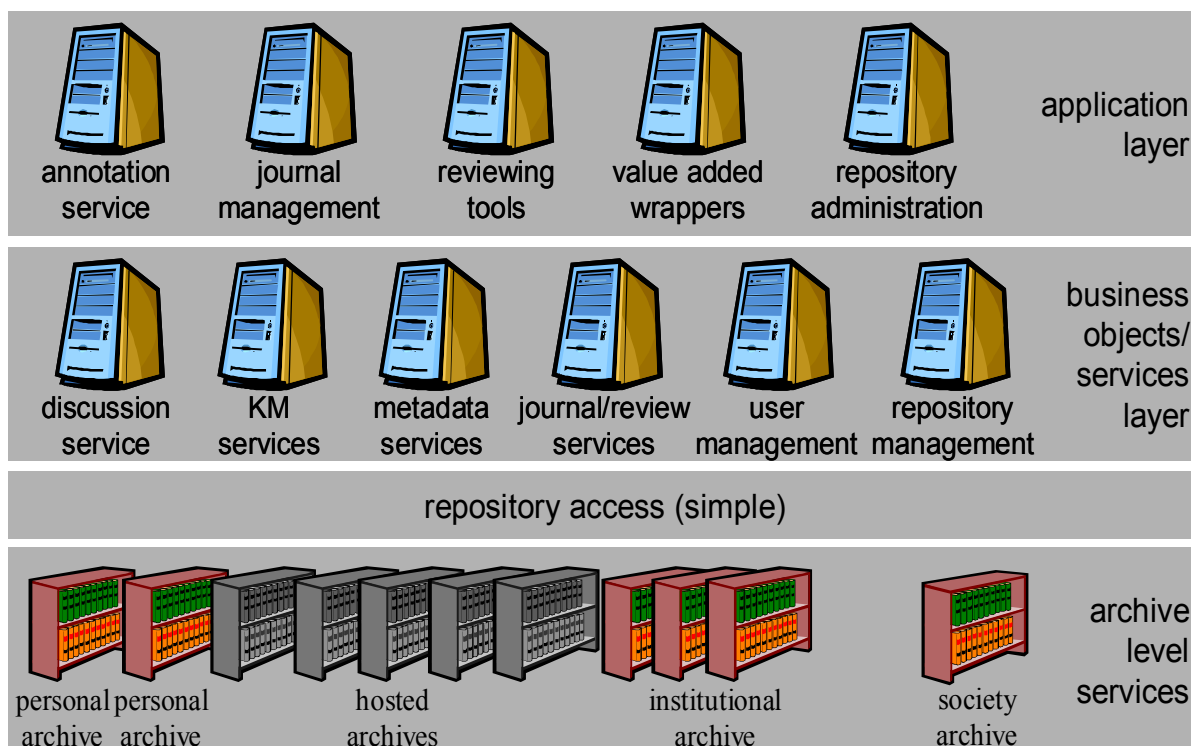
Various standards exist for the definition and representation of metadata (e.g. Dublin Core, MARC 21). Although there are efforts to create converter software to move between metadata standards, e.g. d2m (Dublin Core to MARC) from the Nordic Metadata Project, it will be desirable to allow multiple metadata records to be held for a single article. This implies a separation between the repository and the metadata storage.

Additional “knowledge management” (KM) services may be provided on top of the repository. This may include such things as comparison of articles, searching for similar articles, summarisation, and linking between articles. These services may be provided as additional modules, separately from the repository. It will be important that such services are able to access metadata and articles from other repositories in addition to (or instead of) a local one if they are adequately to support activities such as authoring.

Whilst services may often be accessed through a simple, web-based, thin-client interface, it is important to allow for access by other means, including more closely integrated approaches. For example, authoring tools will need to integrate quite closely with KM services and metadata services in order to provide the kinds of benefits identified in the requirements analysis. In this way, the application may present the service in a form that fits more naturally into the context in which the user is working. This implies that all services should be defined in the form of an API that may be accessed by a range of possible clients, with some user access being provided by separate, web-based client applications where appropriate. This would also allow for the possibility of client applications that make use of and integrate several different services to provide a suitable working environment for a user. An example of such an environment might be an authoring tool used to create industry digests within the value added services area.

3. LOGICAL ARCHITECTURE

The discussion in the previous section leads naturally to a logical architecture that separates storage from services and services from applications. Services are the building blocks that may be used to build applications to suit the requirements of different user communities. This is illustrated in the diagram below:

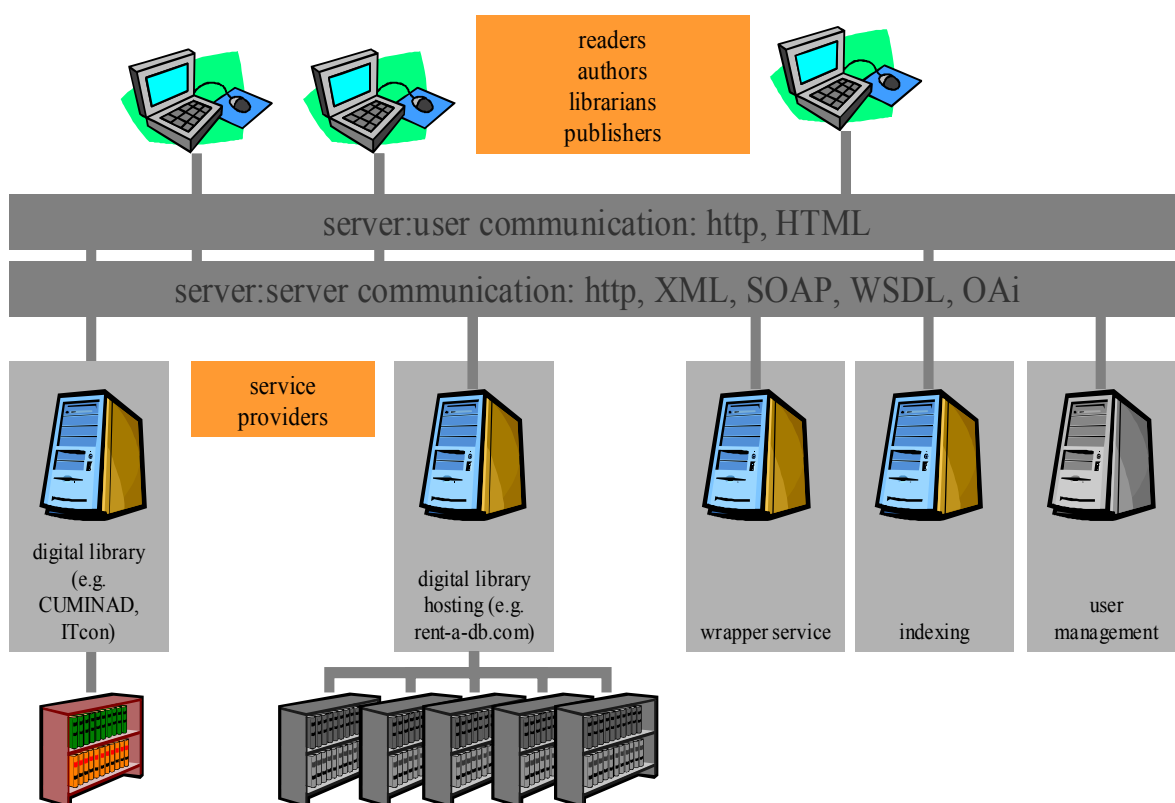


In many cases, elements of the architecture may be combined together on a single server or even in a single software implementation. This will be the case to some extent in the initial implementation of SciX, which will build on the existing infrastructure of the partners, developed through, for example, Woda, Rent-a-db, CUMINCAD, ITcon, and the ECPPM 2002 infrastructure. However it is important that the relevant interfaces are able to be provided to allow inter-working between alternative implementations at each of the levels.

Detailed definitions of the various APIs will be carried out iteratively and incrementally during the implementation phases of the project, based on the use case models presented in the following section. This is necessary partly because of the speed at which developments are proceeding in the domain, and because the “to-be” model of the academic publishing process will be developed partly through the experiences of the project team in developing the system. As part of the implementation planning, work will be carried out on prioritising the service implementations

4. TECHNICAL ARCHITECTURE

The diagram below illustrates how the various components might be distributed physically in an implementation of the proposed SciX system.



The primary means of access in the first instance will be via web-based applications in order to populate the SciX repository initially. Consideration will be given to other access mechanisms once the basic services are in place. However, an OAi based metadata access service will be provided as a priority.

5. MODEL DIAGRAMS

This section comprises the results from the modelling. The first section is Class Diagrams which are a representation of the entities within the system and their inter-relationships.

The following sections contain the Use Case diagrams representing the separate procedures which must be carried out by the system in order to achieve the desired result. The Use cases are sub-divided into the following sections:-

- Article Management(A)
- Industry Value Added Services(I)
- Journal Management(J)
- Reader Management(R)
- User Management(U)
- Review Management(V)

It should be noted that this design is intended to be modular and technology neutral.

1.1 CLASS DIAGRAMS

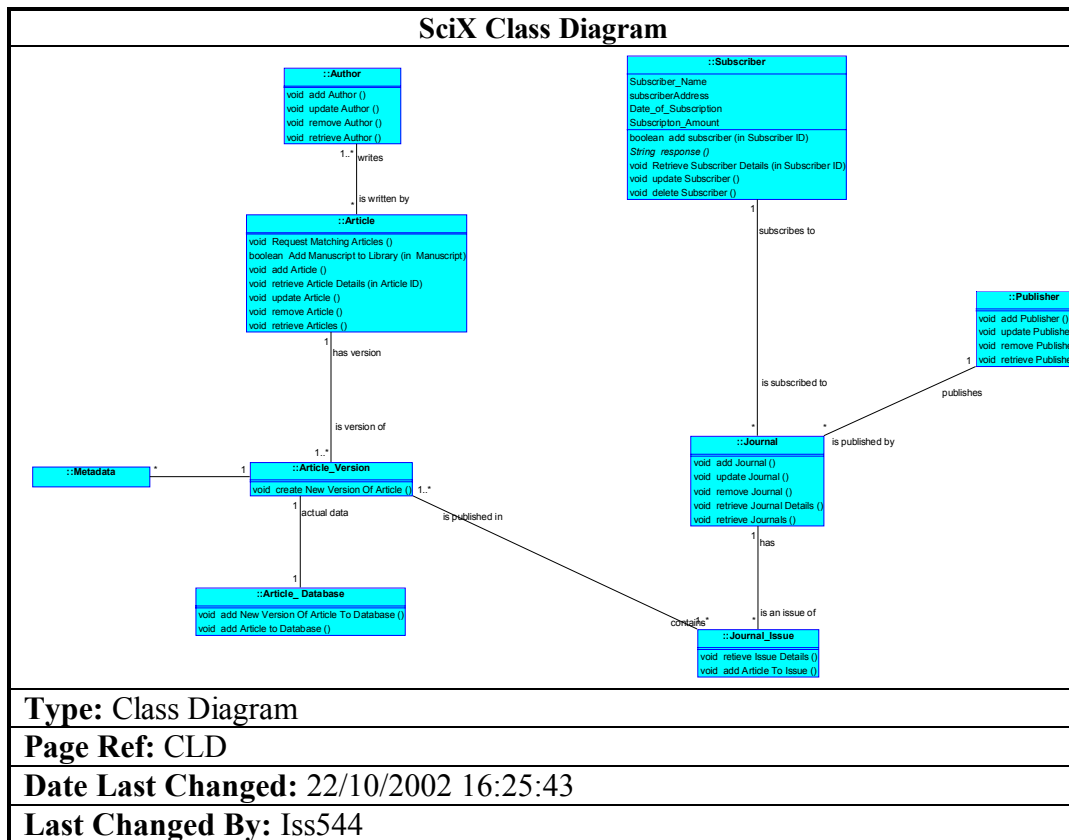


Figure 1: SciX Class Diagram (Class Diagram)

Objects of Type 'Association'

Name	Page
Associates	
Associates	
Associates	
Associates	
Associates	
Associates	
Associates	
Associates	
Associates	

Objects of Type 'Class'

Name	Page
Subscriber	
Article	
Journal	
Publisher	
Journal_Issue	
Article_Version	
Author	
Metadata	
Article_Database	

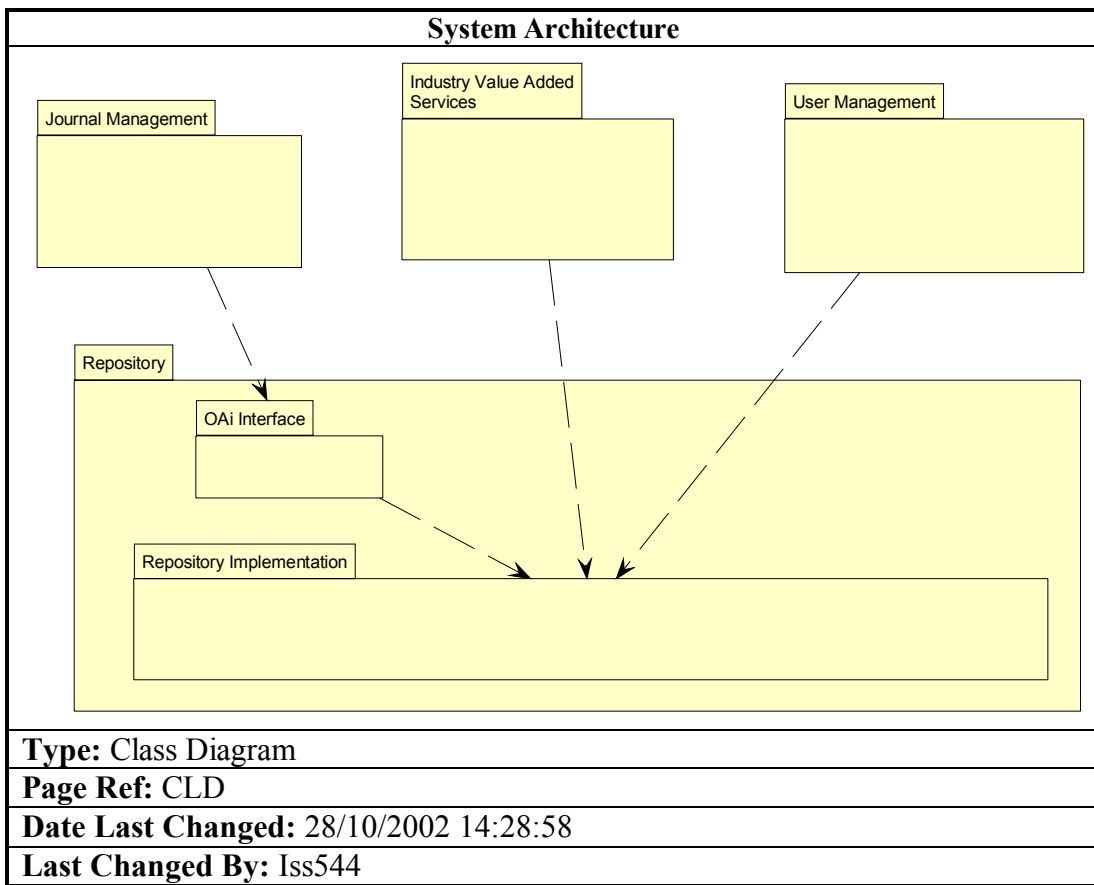


Figure 2: System Architecture (Class Diagram)

Objects of Type 'Dependency'

Name	Page
Dependen cy	
Dependen cy	
Dependen cy	
Dependen cy	

Objects of Type 'Category / Package'

Name	Page
Repository	
OAI Interface	
Repository Implementation	
Industry Value Added Services	
User Management	
Journal Management	

1.2 ARTICLE MANAGEMENT USE CASES

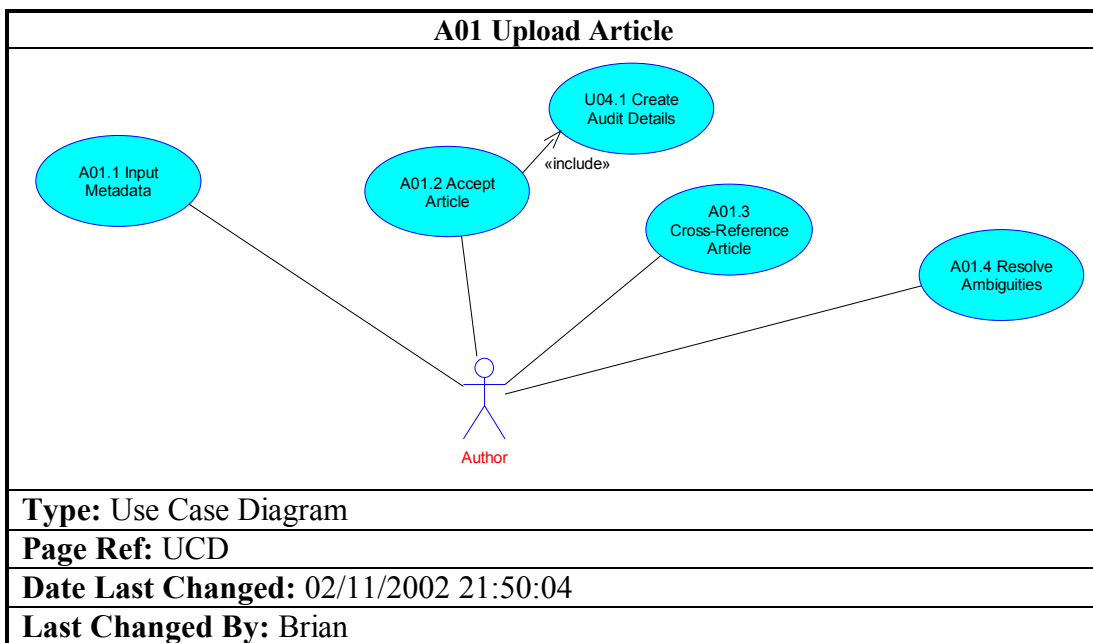


Figure 3: Article Management::A01 Upload Article (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Author	

Objects of Type 'Use Case'

Name	Page
A01.1 Input Metadata	
A01.2 Accept Article	
A01.3 Cross-Reference Article	

Name	Page
A01.4 Resolve Ambiguities	
U04.1 Create Audit Details	

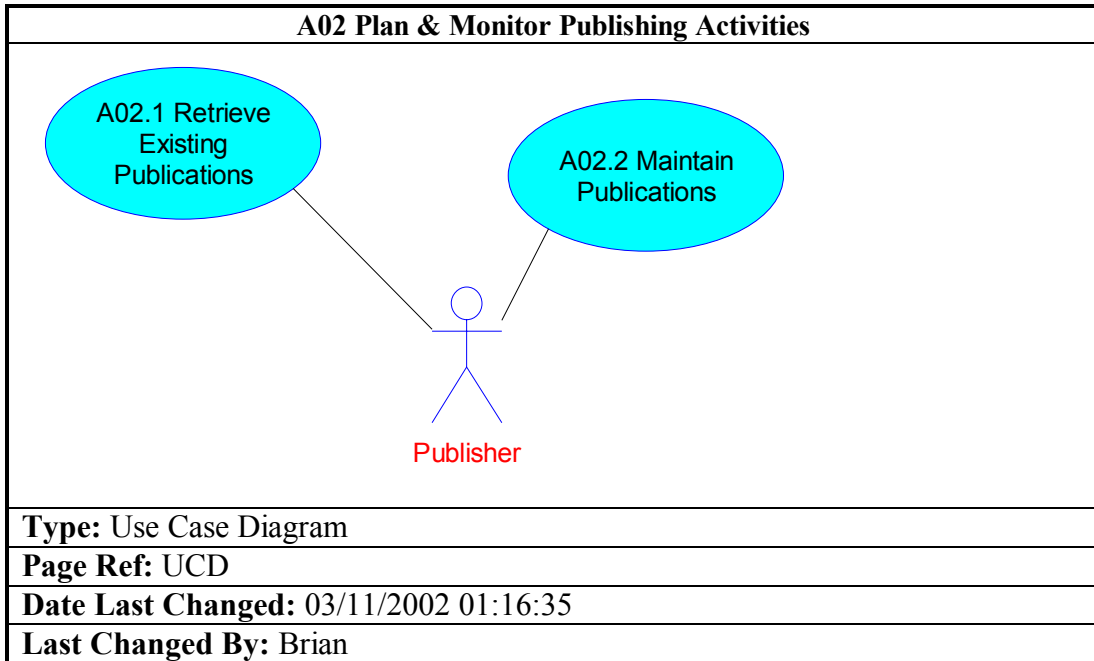


Figure 4: Article Management::A02 Plan & Monitor Publishing Activities (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Publisher	

Objects of Type 'Use Case'

Name	Page
A02.2 Maintain Publications	
A02.1 Retrieve Existing Publications	

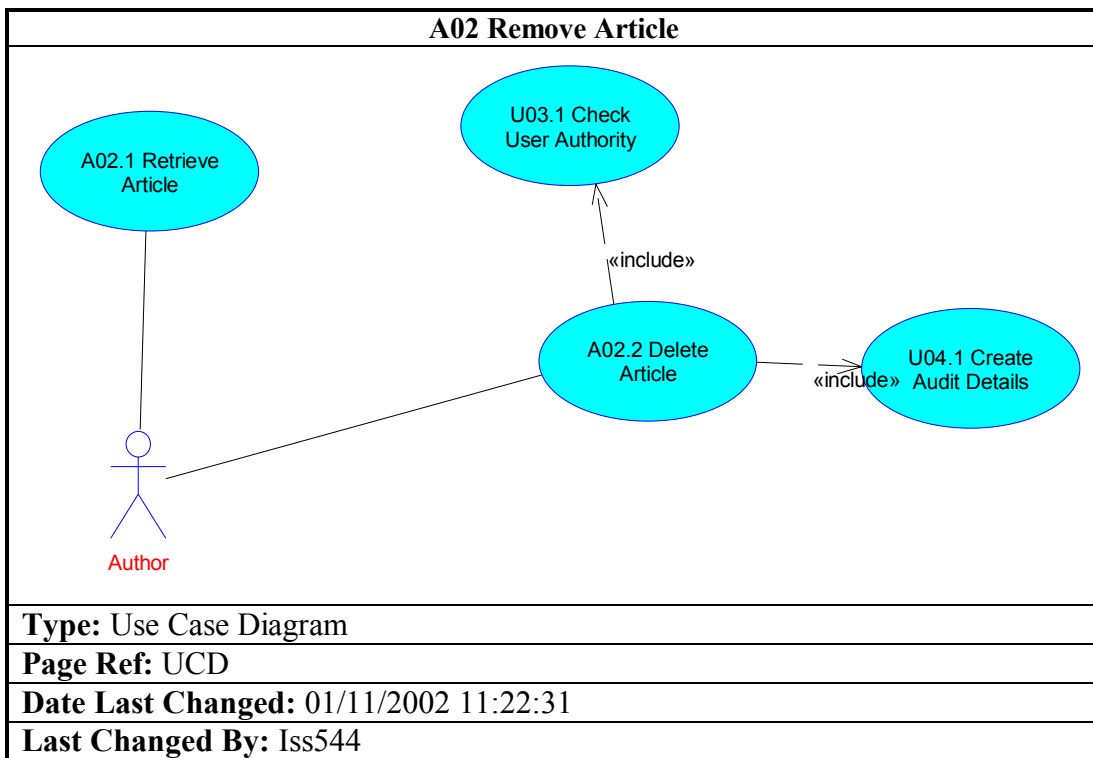


Figure 5: Article Management::A02 Remove Article (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Author	

Objects of Type 'Use Case'

Name	Page
A02.1 Retrieve Article	
U03.1 Check User Authority	
U04.1 Create Audit Details	
A02.2 Delete Article	

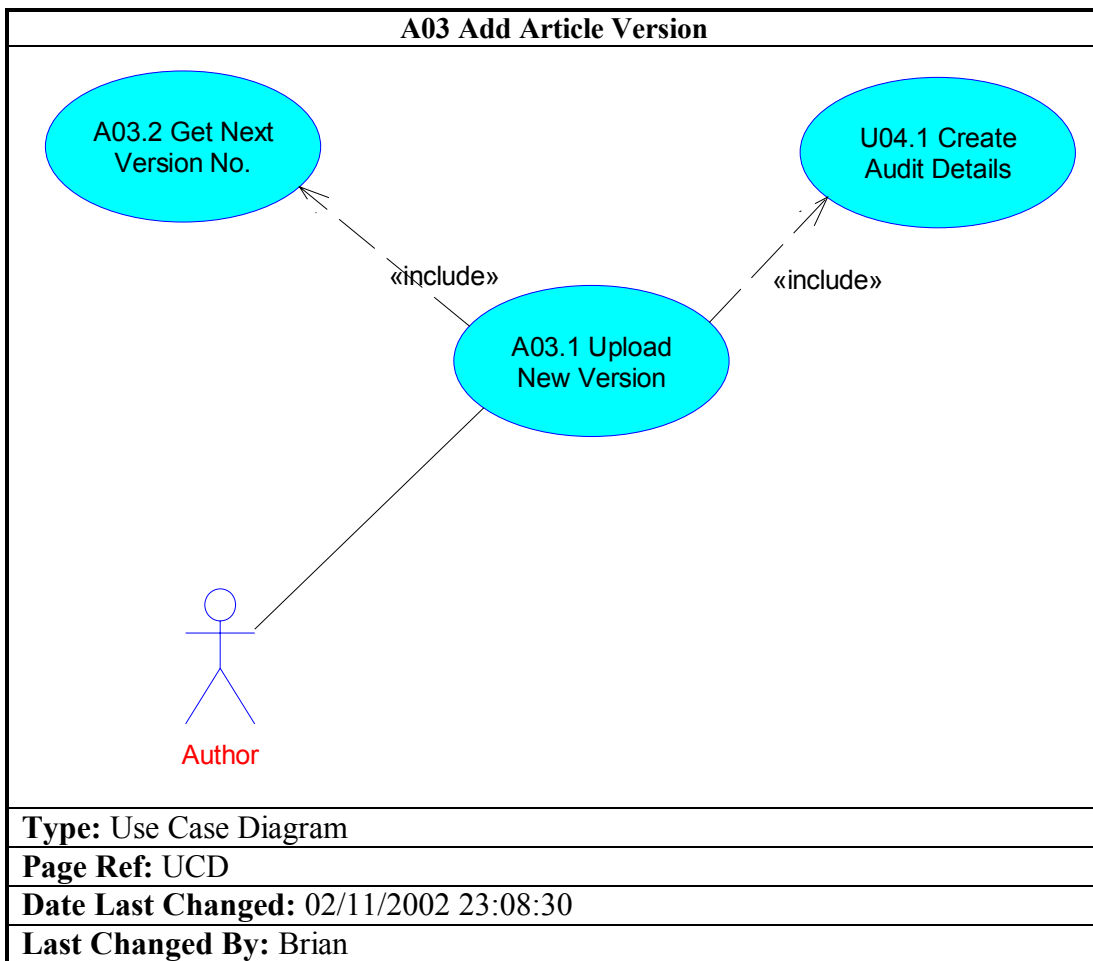


Figure 6: Article Management::A03 Add Article Version (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Author	

Objects of Type 'Use Case'

Name	Page
U04.1 Create Audit Details	
A03.2 Get Next Version No.	
A03.1 Upload New Version	

A04 generate Article Citations
Type: Use Case Diagram
Page Ref: UCD
Date Last Changed: 01/11/2002 11:25:46
Last Changed By: Iss544

Figure 7: Article Management::A04 generate Article Citations (Use Case Diagram)

A05 notify Author of Citations
Type: Use Case Diagram
Page Ref: UCD
Date Last Changed: 01/11/2002 11:26:57
Last Changed By: Iss544

Figure 8: Article Management::A05 notify Author of Citations (Use Case Diagram)

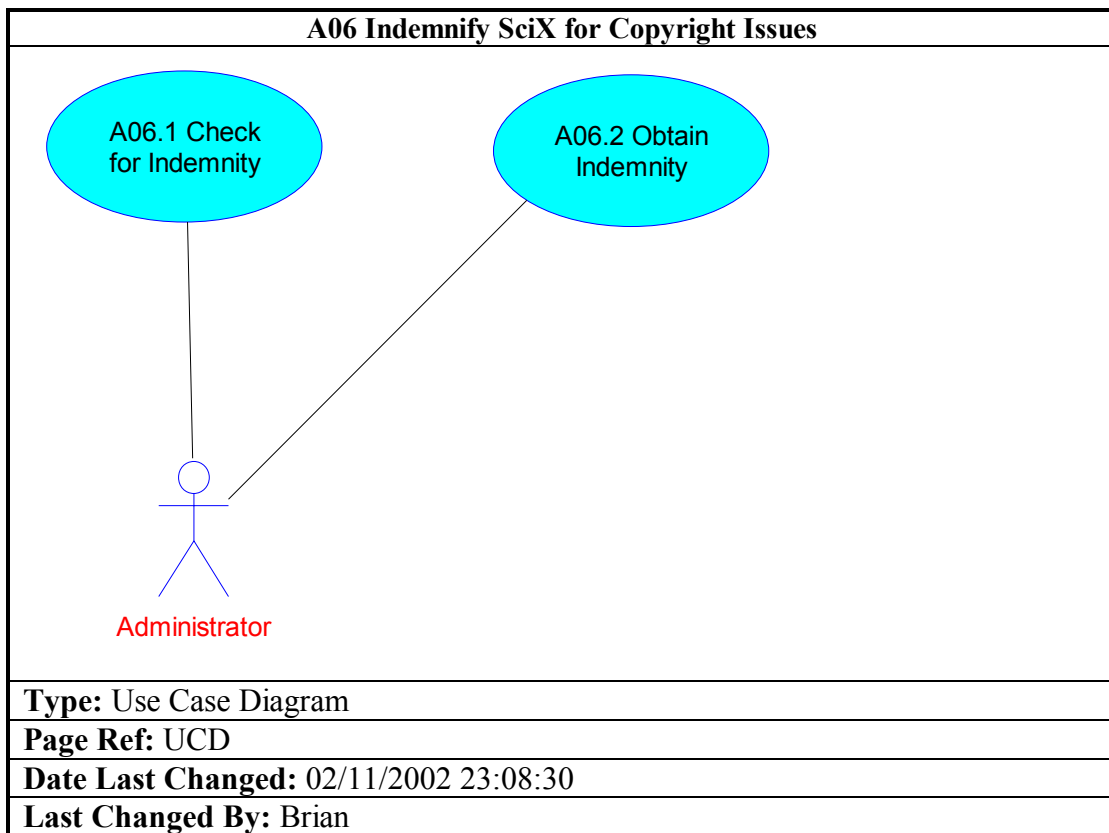


Figure 9: Article Management::A06 Indemnify SciX for Copyright Issues (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Administrat or	

Objects of Type 'Use Case'

Name	Page
A06.2 Obtain Indemnity	
A06.1 Check for Indemnity	

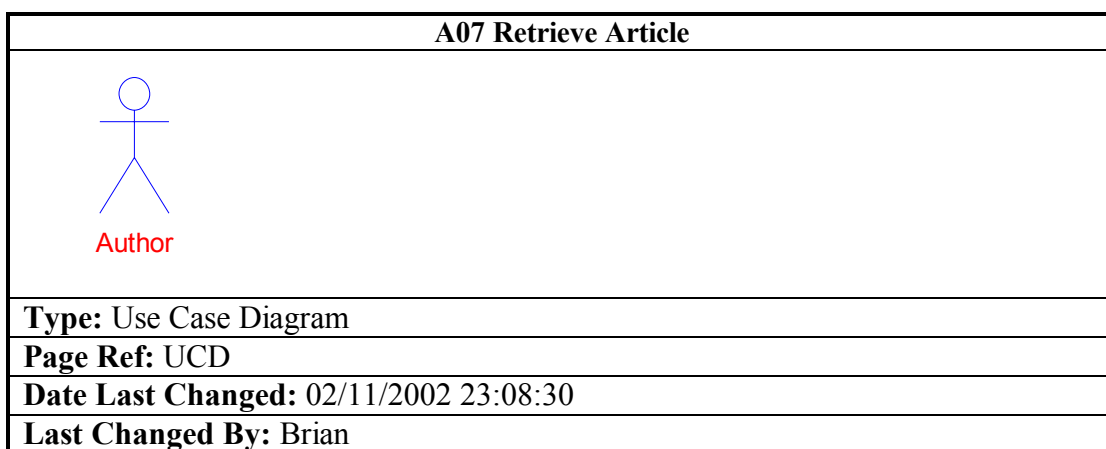


Figure 10: Article Management::A07 Retrieve Article (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Author	

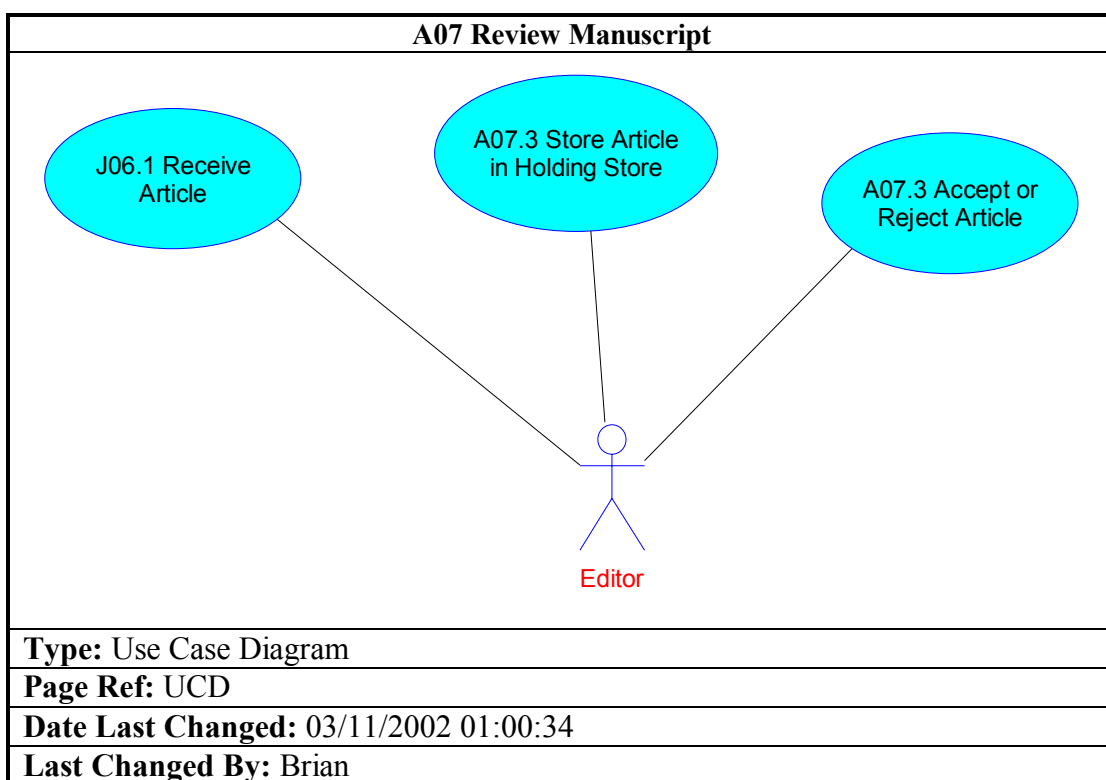


Figure 11: Article Management::A07 Review Manuscript (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Editor	

Objects of Type 'Use Case'

Name	Page
A07.3 Accept or Reject Article	
A07.3 Store Article in Holding Store	
J06.1 Receive Article	

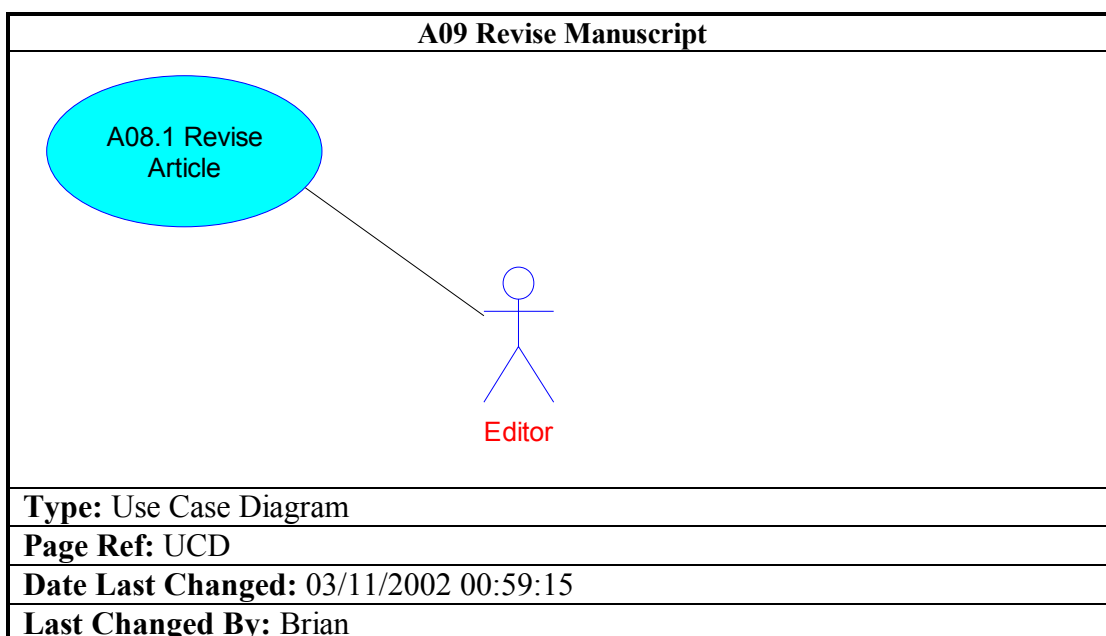


Figure 12: Article Management::A09 Revise Manuscript (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Editor	

Objects of Type 'Use Case'

Name	Page
A08.1 Revise Article	

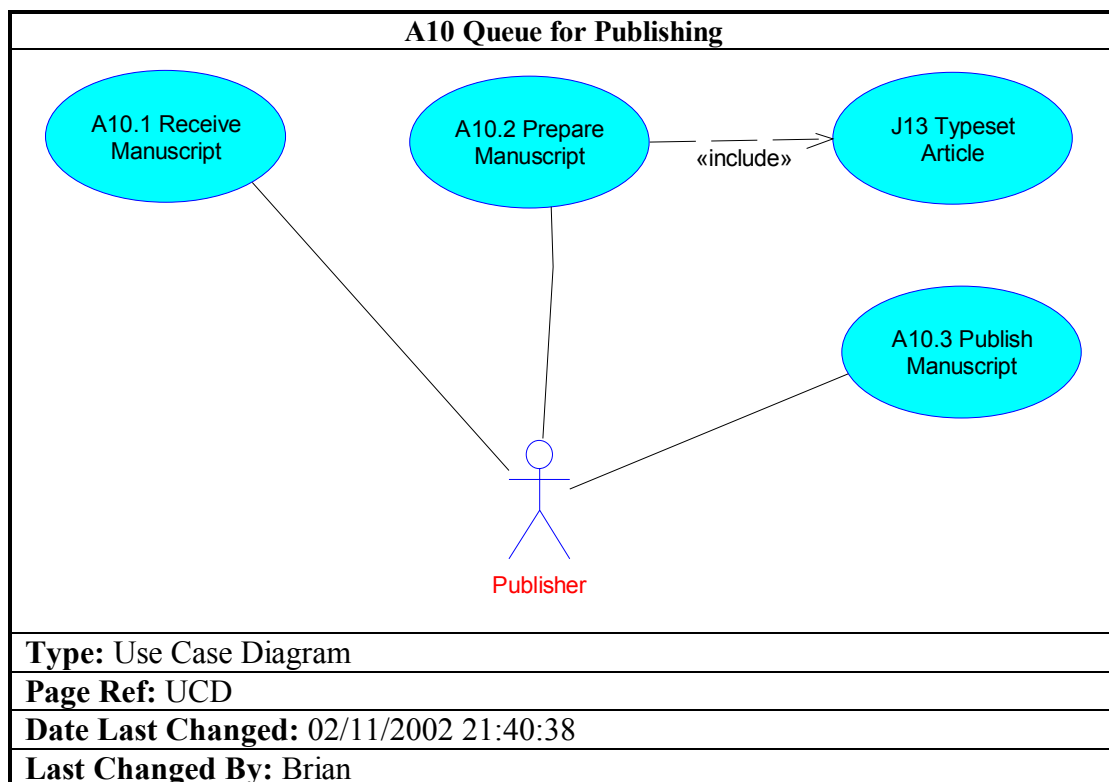


Figure 13: Article Management::A10 Queue for Publishing (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Publisher	

Objects of Type 'Use Case'

Name	Page
A10.1 Receive Manuscript	
A10.2 Prepare Manuscript	
A10.3 Publish Manuscript	
J13 Typeset Article	

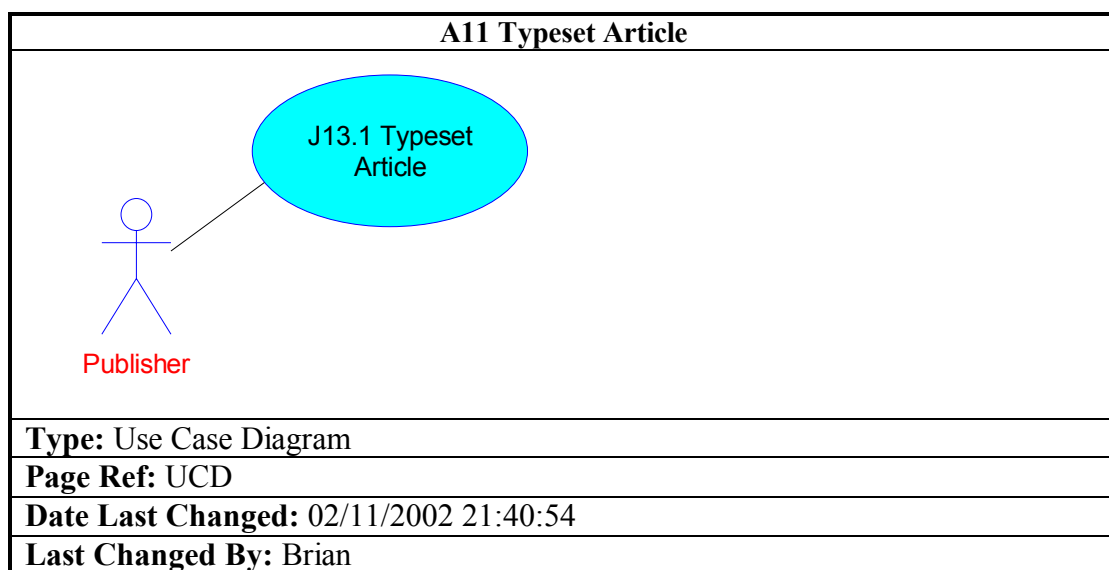


Figure 14: Article Management::A11 Typeset Article (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Publisher	

Objects of Type 'Use Case'

Name	Page
J13.1 Typeset Article	

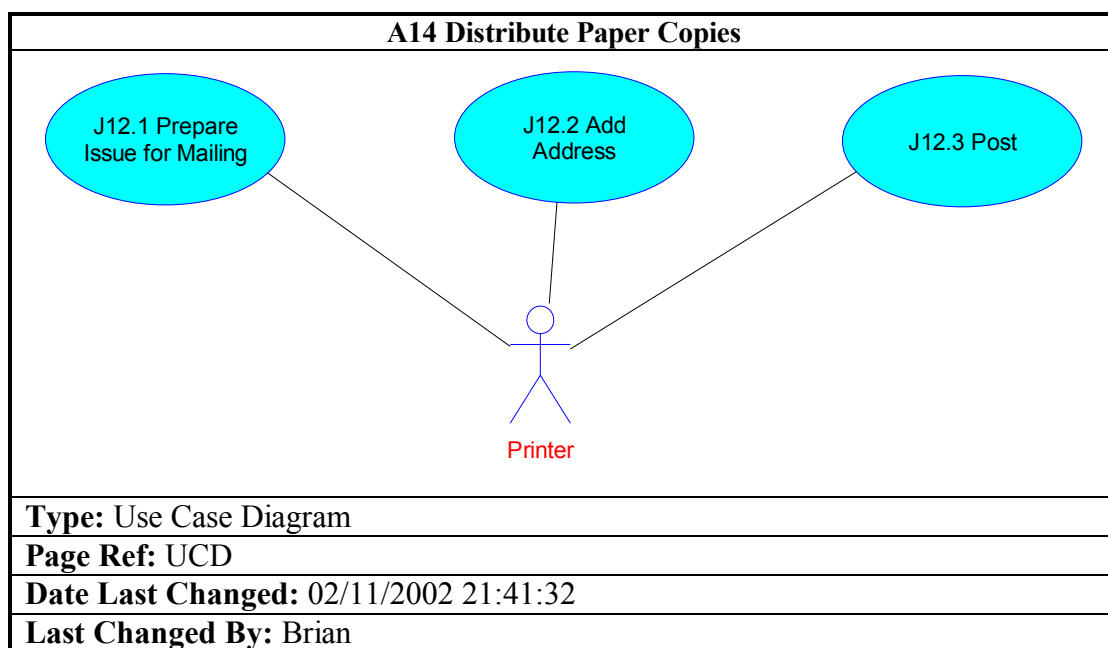


Figure 15: Article Management::A14 Distribute Paper Copies (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Printer	

Objects of Type 'Use Case'

Name	Page
J12.2 Add Address	
J12.3 Post	
J12.1 Prepare Issue for Mailing	

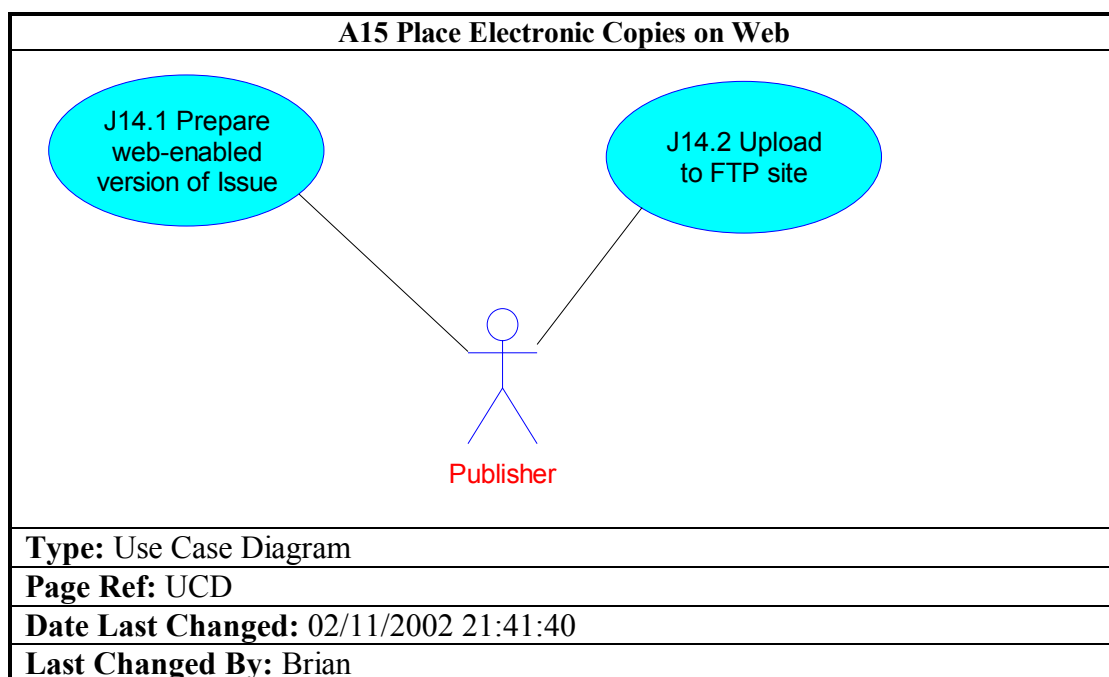


Figure 16 : Article Management::A15 Place Electronic Copies on Web (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Publisher	

Objects of Type 'Use Case'

Name	Page
J14.2 Upload to FTP site	
J14.1 Prepare web-enabled version of Issue	

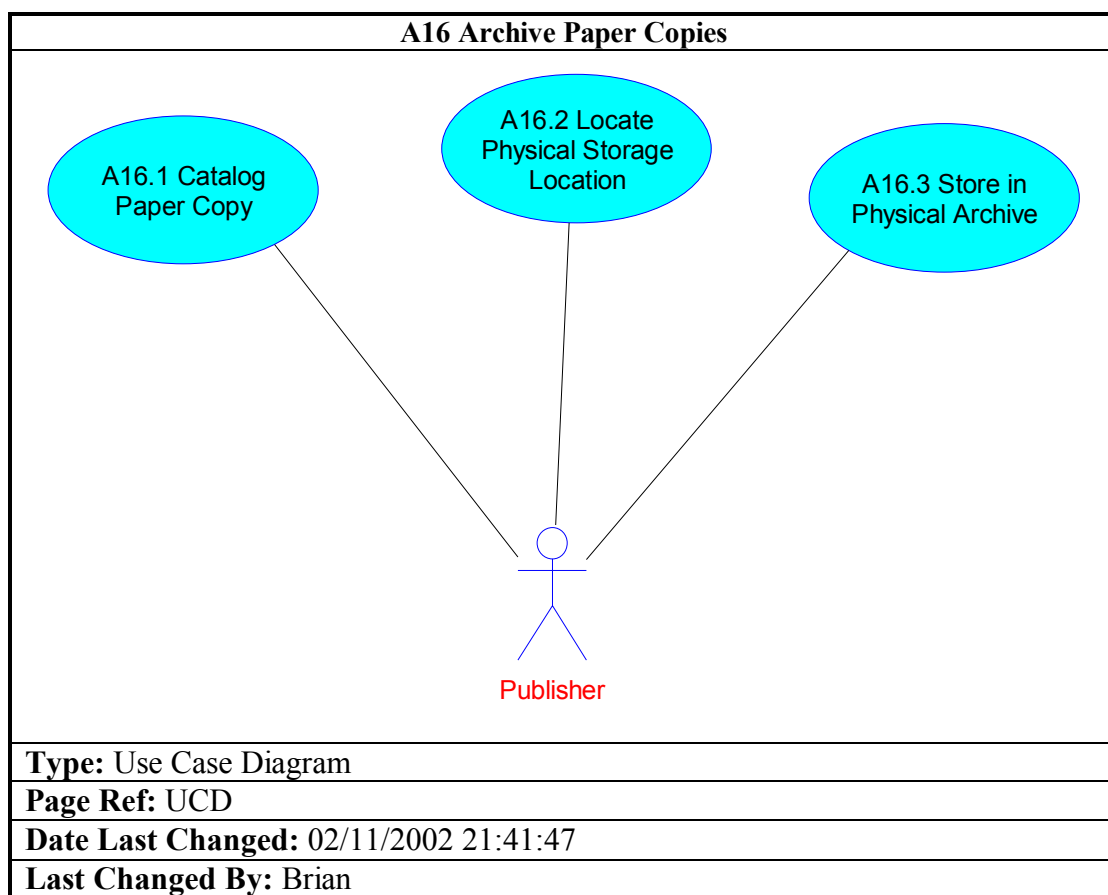


Figure 17: Article Management::A16 Archive Paper Copies (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Publisher	

Objects of Type 'Use Case'

Name	Page
A16.2 Locate Physical Storage Location	
A16.1 Catalog Paper Copy	
A16.3 Store in Physical Archive	

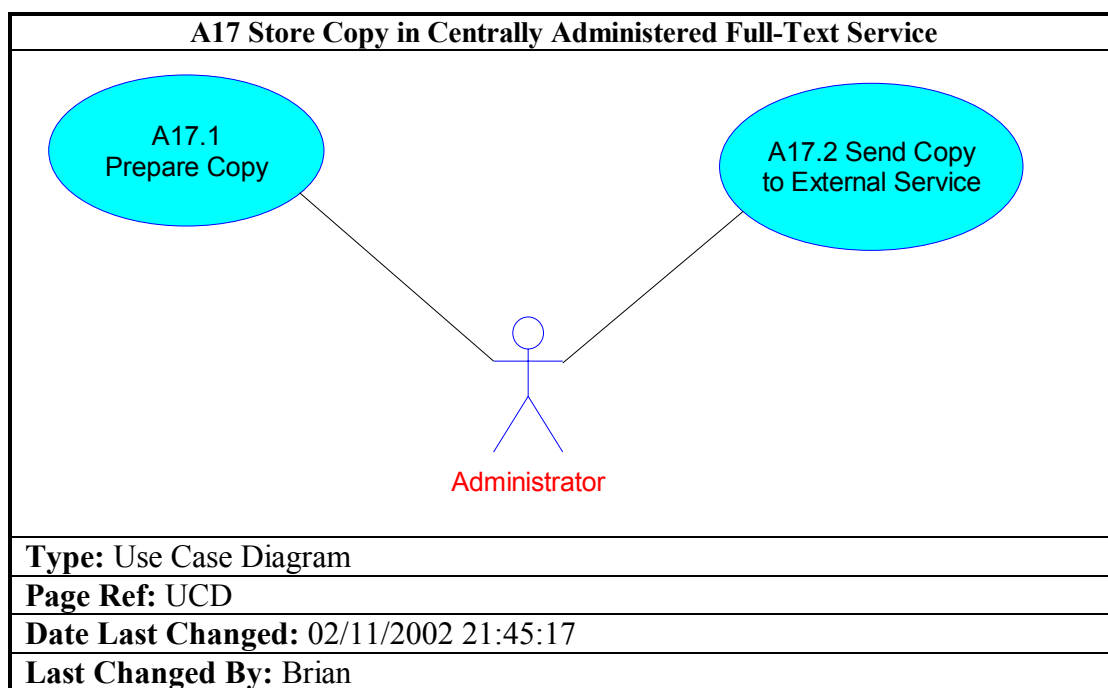


Figure 18: Article Management::A17 Store Copy in Centrally Administered Full-Text Service (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Administrator	

Objects of Type 'Use Case'

Name	Page
A17.1 Prepare Copy	
A17.2 Send Copy to External Service	

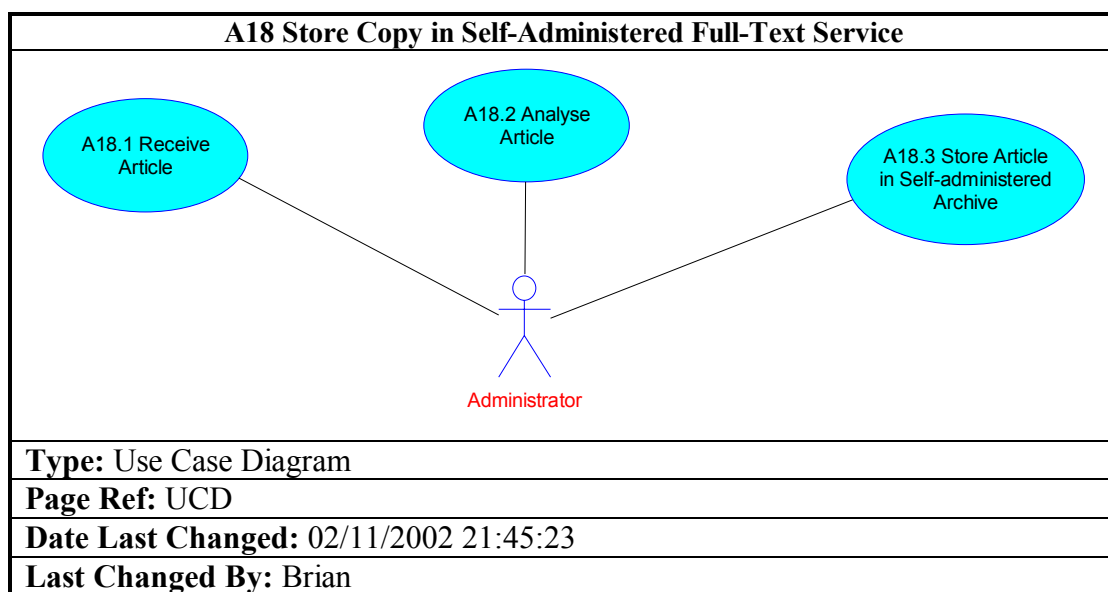


Figure 19: Article Management::A18 Store Copy in Self-Administered Full-Text Service (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Administrator	

Objects of Type 'Use Case'

Name	Page
A18.3 Store Article in Self-administered Archive	
A18.2 Analyse Article	
A18.1 Receive Article	

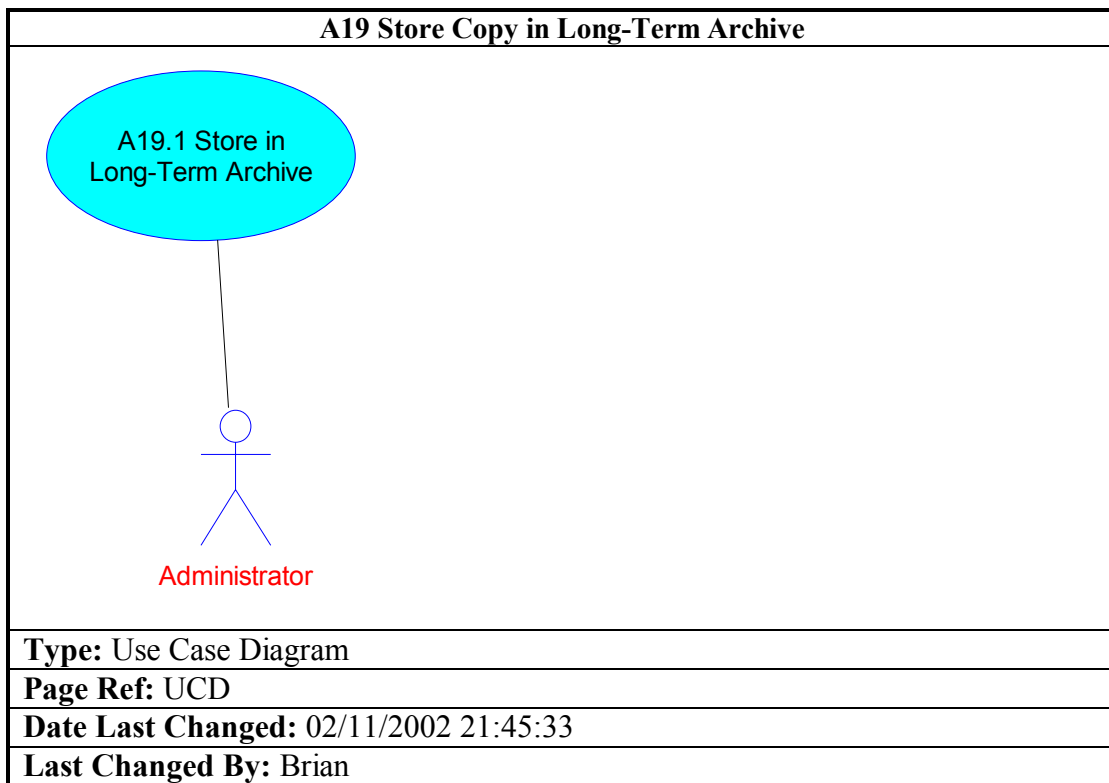


Figure 20: Article Management::A19 Store Copy in Long-Term Archive (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Administrator	

Objects of Type 'Use Case'

Name	Page
A19.1 Store in Long-Term Archive	

A20 Run Centrally Administered Metadata Service
Type: Use Case Diagram
Page Ref: UCD
Date Last Changed: 02/11/2002 21:45:41
Last Changed By: Brian

Figure 21: Article Management::A20 Run Centrally Administered Metadata Service (Use Case Diagram)

A21 Run Self Administered Metadata Service
Type: Use Case Diagram
Page Ref: UCD
Date Last Changed: 02/11/2002 21:45:49
Last Changed By: Brian

Figure 22: Article Management::A21 Run Self Administered Metadata Service (Use Case Diagram)

A22 Run Automated Metadata Service
Type: Use Case Diagram
Page Ref: UCD
Date Last Changed: 02/11/2002 21:45:57
Last Changed By: Brian

Figure 23: Article Management::A22 Run Automated Metadata Service (Use Case Diagram)

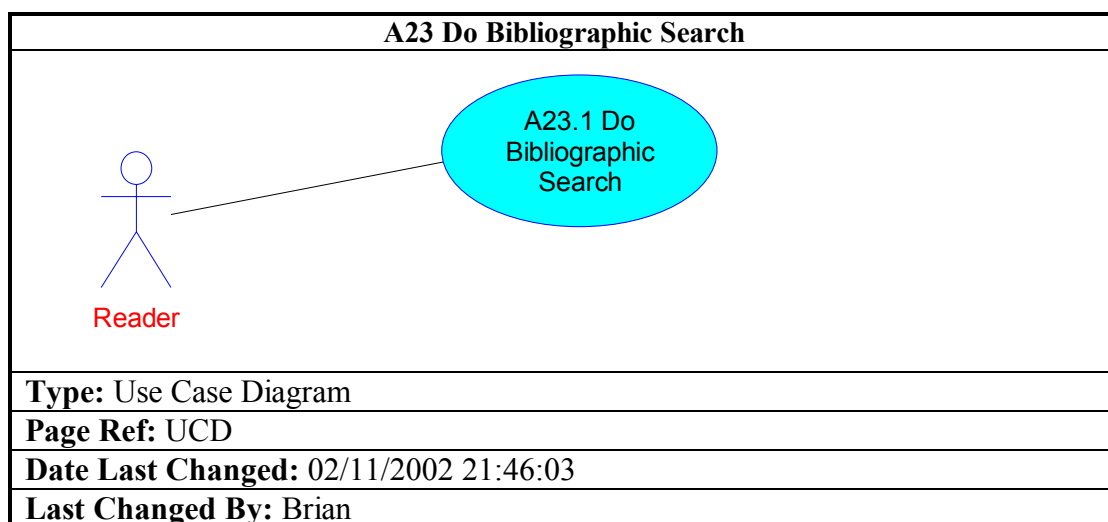


Figure 24: Article Management::A23 Do Bibliographic Search (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Reader	

Objects of Type 'Use Case'

Name	Page
A23.1 Do Bibliographic Search	

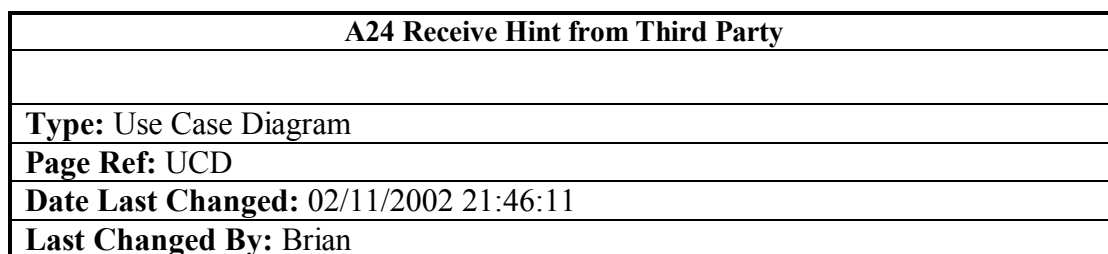


Figure 25: Article Management::A24 Receive Hint from Third Party (Use Case Diagram)

A25 Notice Reference in other Publication
Type: Use Case Diagram
Page Ref: UCD
Date Last Changed: 02/11/2002 21:46:17
Last Changed By: Brian

Figure 26: Article Management::A25 Notice Reference in other Publication (Use Case Diagram)

A26 Remember Existence of Publication
Type: Use Case Diagram
Page Ref: UCD
Date Last Changed: 02/11/2002 21:46:23
Last Changed By: Brian

Figure 27: Article Management::A26 Remember Existence of Publication (Use Case Diagram)

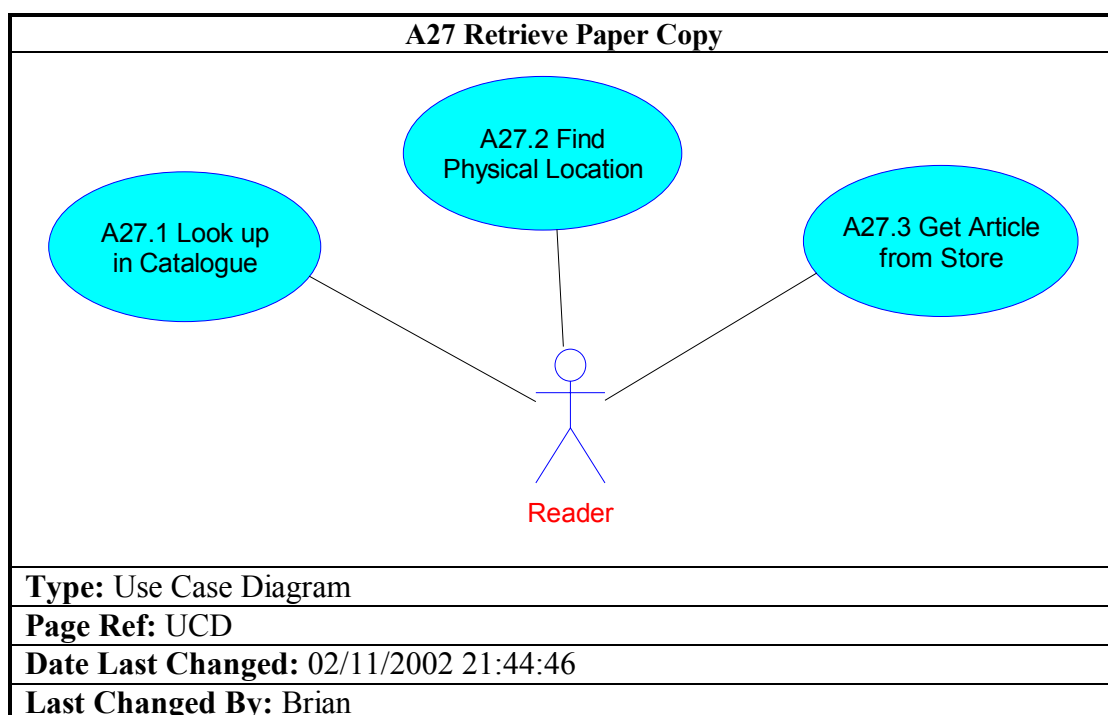


Figure 28: Article Management::A27 Retrieve Paper Copy (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Reader	

Objects of Type 'Use Case'

Name	Page
A27.2 Find Physical Location	
A27.1 Look up in Catalogue	
A27.3 Get Article from Store	

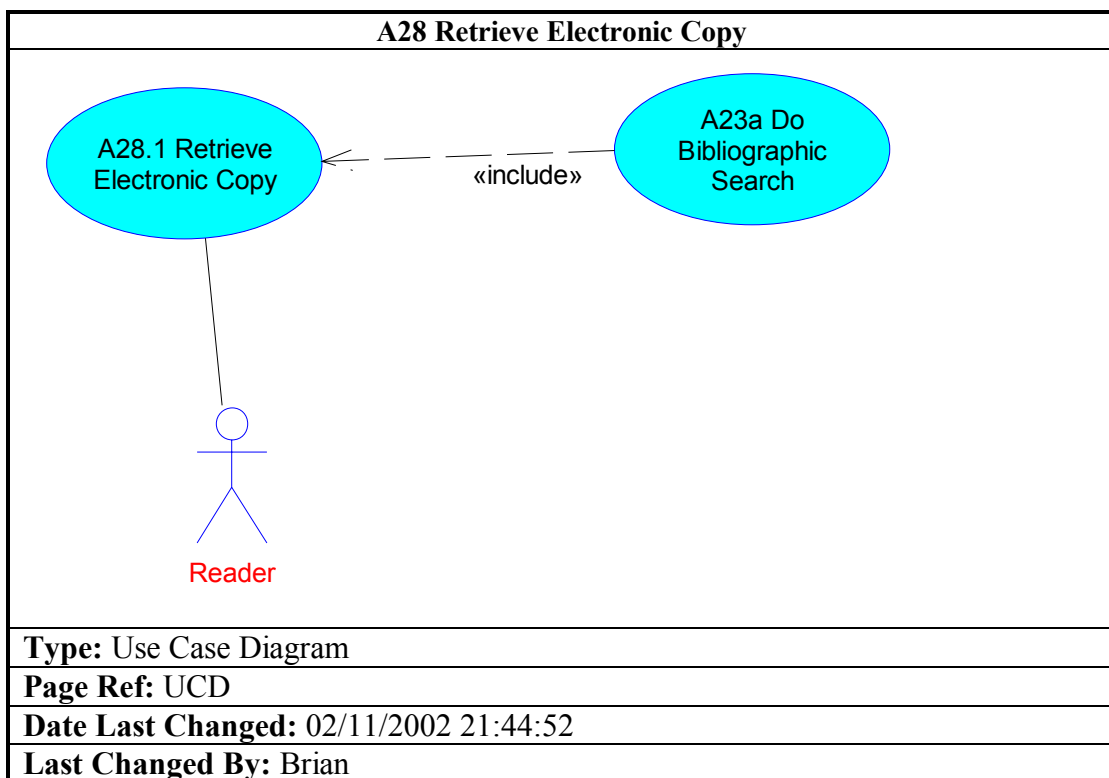


Figure 29: Article Management::A28 Retrieve Electronic Copy (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Reader	

Objects of Type 'Use Case'

Name	Page
A23a Do Bibliographic Search	
A28.1 Retrieve Electronic Copy	

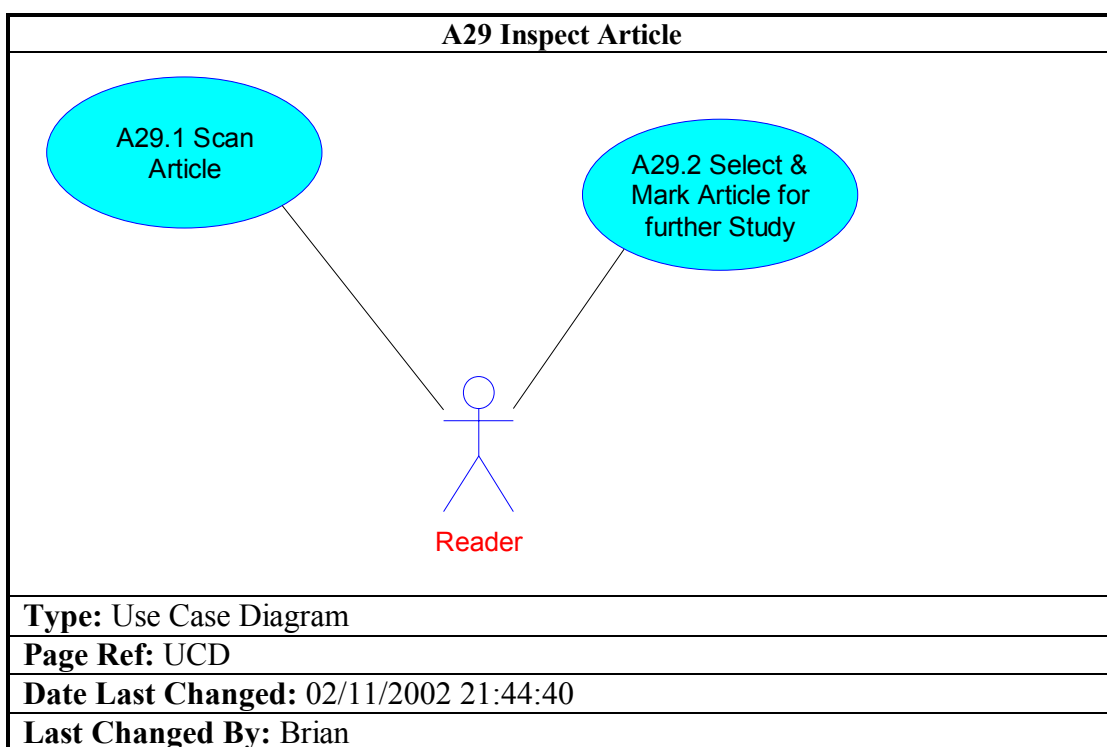


Figure 30: Article Management::A29 Inspect Article (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Reader	

Objects of Type 'Use Case'

Name	Page
A29.2 Select & Mark Article for further Study	
A29.1 Scan Article	

A30 Read Article
Type: Use Case Diagram
Page Ref: UCD
Date Last Changed: 02/11/2002 21:44:23
Last Changed By: Brian

Figure 31: Article Management::A30 Read Article (Use Case Diagram)

A31 Self-Archive for Future Reference
Type: Use Case Diagram
Page Ref: UCD
Date Last Changed: 02/11/2002 21:44:29
Last Changed By: Brian

Figure 32: Article Management::A31 Self-Archive for Future Reference (Use Case Diagram)

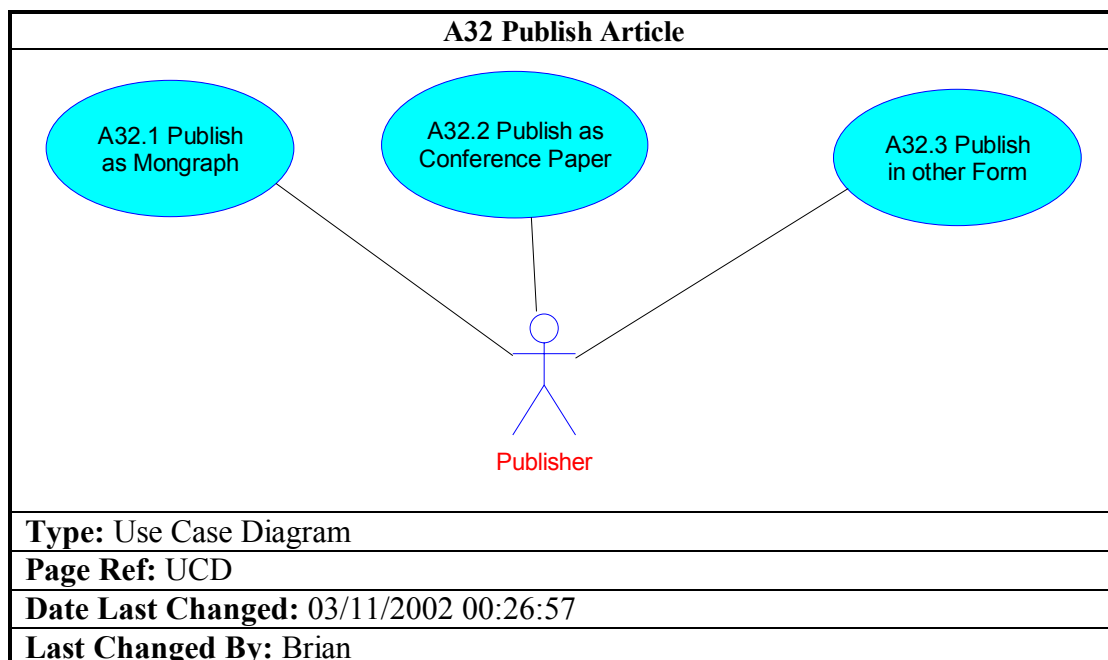


Figure 33: Article Management::A32 Publish Article (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Publisher	

Objects of Type 'Use Case'

Name	Page
A32.2 Publish as Conference Paper	
A32.3 Publish in other Form	
A32.1 Publish as Mongraph	

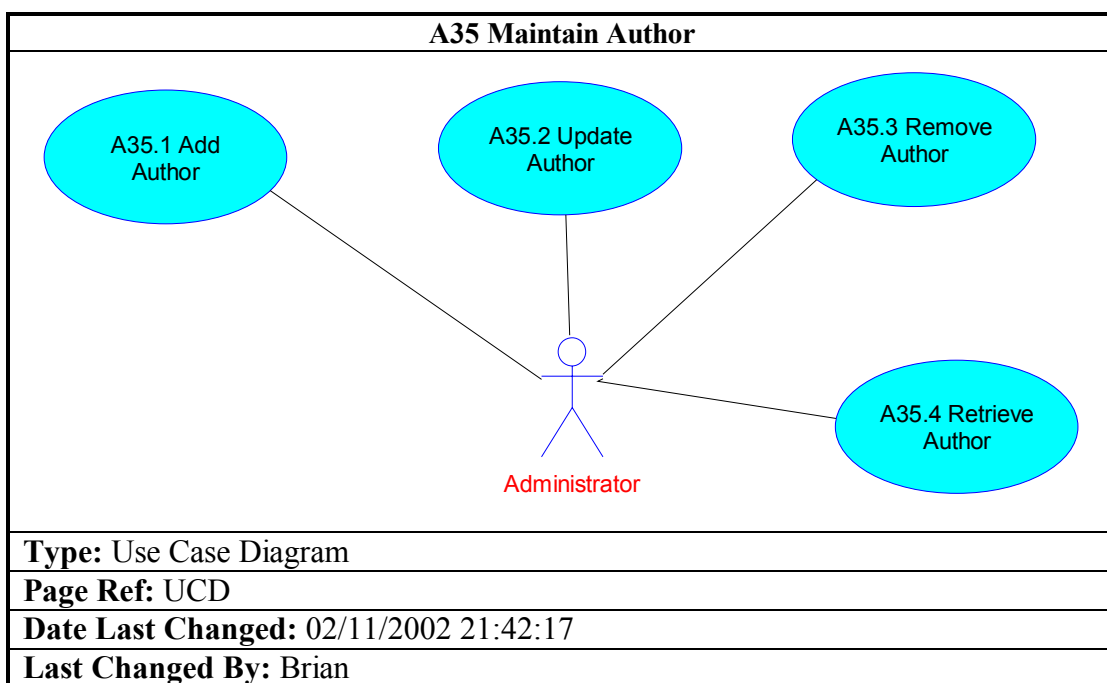


Figure 34: Article Management::A35 Maintain Author (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Administrator	

Objects of Type 'Use Case'

Name	Page
------	------

Name	Page
A35.2 Update Author	
A35.3 Remove Author	
A35.4 Retrieve Author	
A35.1 Add Author	

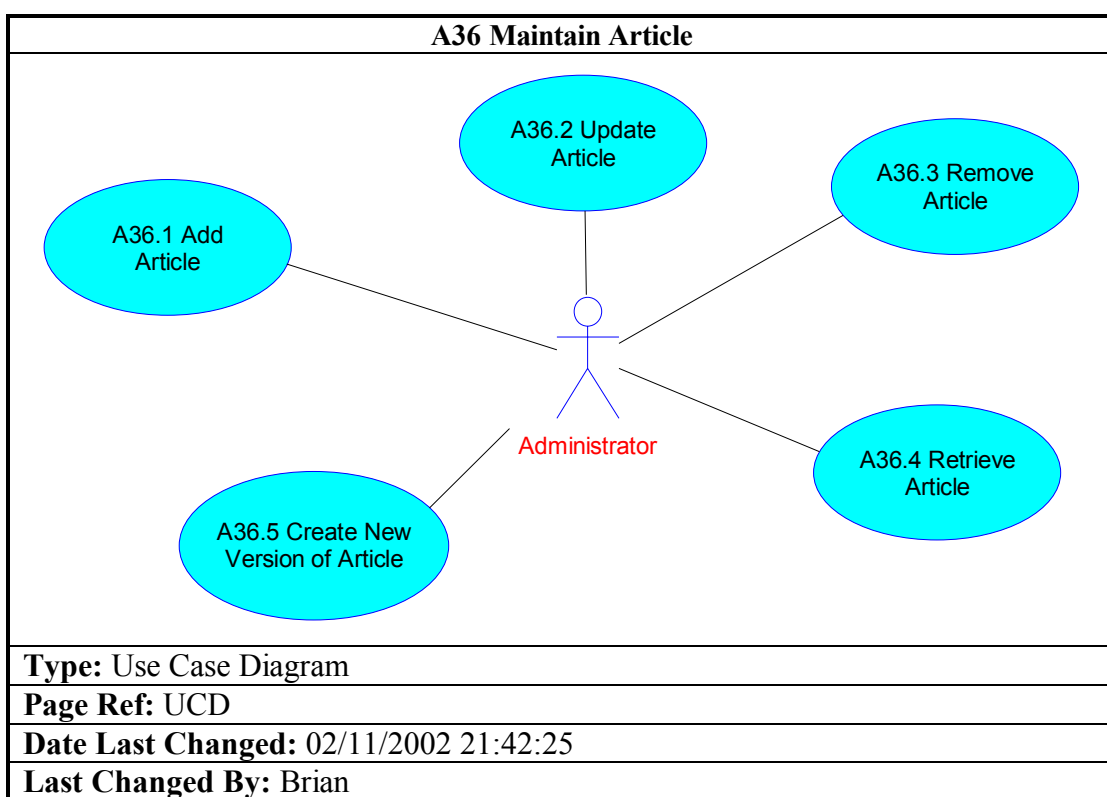


Figure 35: Article Management::A36 Maintain Article (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Administrator	

Objects of Type 'Use Case'

Name	Page
------	------

Name	Page
A36.1 Add Article	
A36.2 Update Article	
A36.3 Remove Article	
A36.4 Retrieve Article	
A36.5 Create New Version of Article	

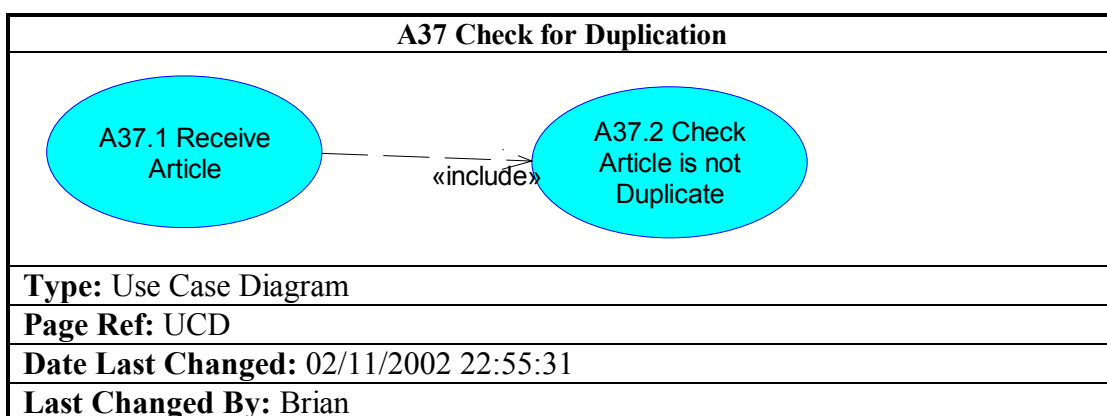


Figure 36: Article Management::A37 Check for Duplication (Use Case Diagram)

Objects of Type 'Use Case'

Name	Page
A37.2 Check Article is not Duplicate	
A37.1 Receive Article	

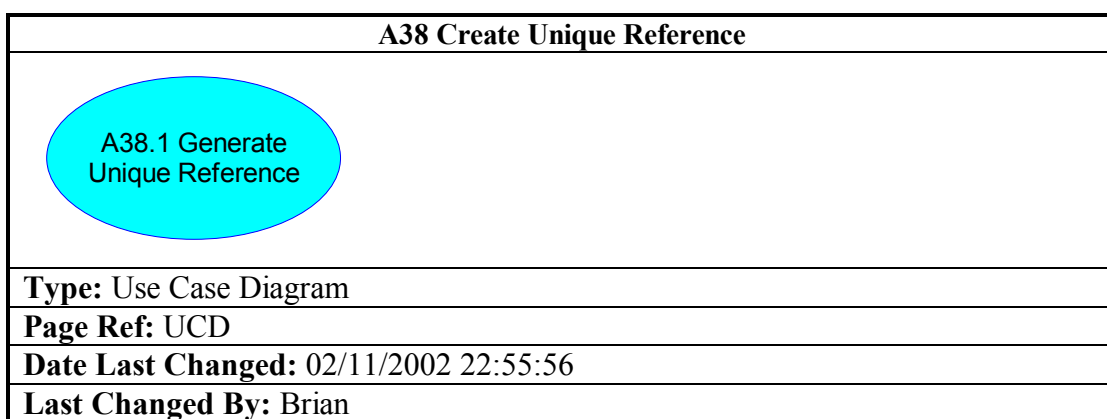


Figure 37: Article Management::A38 Create Unique Reference (Use Case Diagram)

Objects of Type 'Use Case'

Name	Page
A38.1 Generate Unique Reference	

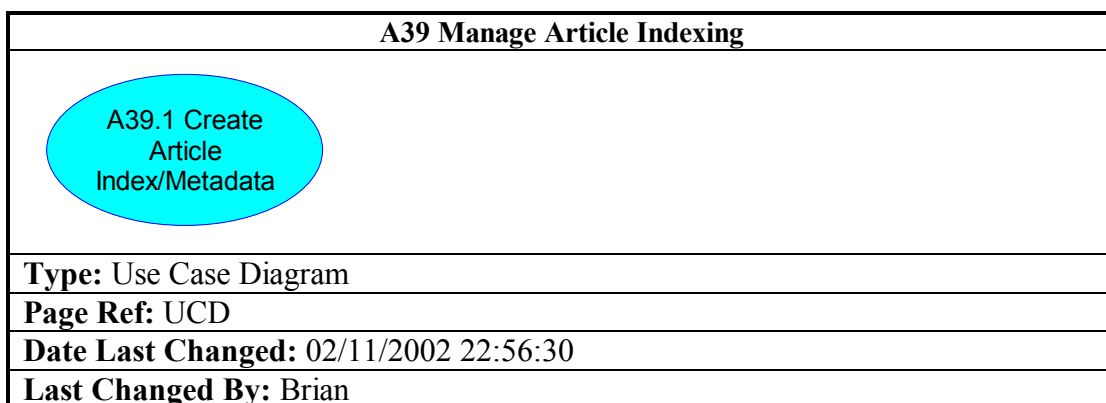


Figure 38: Article Management::A39 Manage Article Indexing (Use Case Diagram)

Objects of Type 'Use Case'

Name	Page
A39.1 Create Article Index/Metadata	

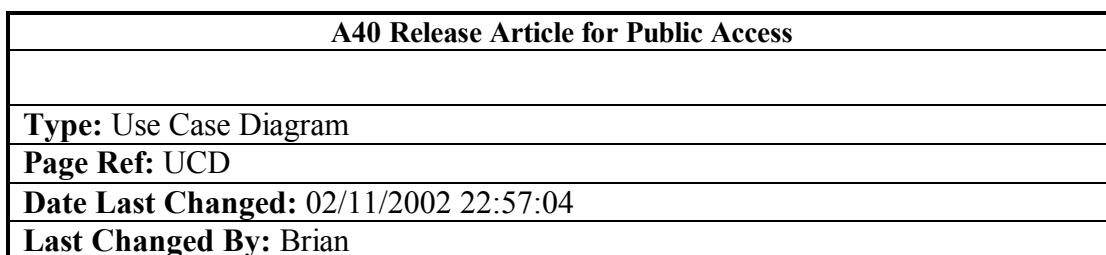


Figure 39: Article Management::A40 Release Article for Public Access (Use Case Diagram)

1.3 INDUSTRY VALUE ADDED USE CASES

I01 Produce Digest
Type: Use Case Diagram
Page Ref: UCD
Date Last Changed: 01/11/2002 11:58:26
Last Changed By: Iss544

Figure 40: Industry Value Added Services::I01 Produce Digest (Use Case Diagram)

I02 Copy and Paste from Article
Type: Use Case Diagram
Page Ref: UCD
Date Last Changed: 01/11/2002 11:59:18
Last Changed By: Iss544

Figure 41: Industry Value Added Services:I02 Copy and Paste from Article (Use Case Diagram)

I03 Track Sources
Type: Use Case Diagram
Page Ref: UCD
Date Last Changed: 01/11/2002 12:00:33
Last Changed By: Iss544

Figure 42: Industry Value Added Services:I03 Track Sources (Use Case Diagram)

I04 Rate Relevance of Article
Type: Use Case Diagram
Page Ref: UCD
Date Last Changed: 01/11/2002 12:02:02
Last Changed By: Iss544

Figure 43: Industry Value Added Services:I04 Rate Relevance of Article (Use Case Diagram)

I05 Maintain Bibliographic List
Type: Use Case Diagram
Page Ref: UCD
Date Last Changed: 02/11/2002 22:31:19
Last Changed By: Brian

Figure 44: Industry Value Added Services:I05 Maintain Bibliographic List (Use Case Diagram)

I06 Maintain Citation Index
Type: Use Case Diagram
Page Ref: UCD
Date Last Changed: 02/11/2002 22:31:36
Last Changed By: Brian

Figure 45: Industry Value Added Services:I06 Maintain Citation Index (Use Case Diagram)

I07 Download SciX data to local Machine
Type: Use Case Diagram
Page Ref: UCD
Date Last Changed: 02/11/2002 22:32:31
Last Changed By: Brian

Figure 46: Industry Value Added Services:I07 Download SciX data to local Machine (Use Case Diagram)

I08 Generate standard citation
Type: Use Case Diagram
Page Ref: UCD
Date Last Changed: 02/11/2002 22:33:10
Last Changed By: Brian

Figure 47: Industry Value Added Services:I08 Generate standard citation (Use Case Diagram)

I09 Store Search Criteria
Type: Use Case Diagram
Page Ref: UCD
Date Last Changed: 02/11/2002 22:33:43
Last Changed By: Brian

Figure 48: Industry Value Added Services:I09 Store Search Criteria (Use Case Diagram)

I10 Create & Maintain Bookmark
Type: Use Case Diagram
Page Ref: UCD
Date Last Changed: 02/11/2002 22:34:15
Last Changed By: Brian

Figure 49: Industry Value Added Services:I10 Create & Maintain Bookmark (Use Case Diagram)

I11 Organise Author content
Type: Use Case Diagram
Page Ref: UCD
Date Last Changed: 02/11/2002 22:35:26
Last Changed By: Brian

Figure 50: Industry Value Added Services:I11 Organise Author content (Use Case Diagram)

I13 Register Business partner
Type: Use Case Diagram
Page Ref: UCD
Date Last Changed: 02/11/2002 22:36:32
Last Changed By: Brian

Figure 51: Industry Value Added Services:I13 Register Business partner (Use Case Diagram)

I14 Maintain Schedule for content delivery
Type: Use Case Diagram
Page Ref: UCD
Date Last Changed: 02/11/2002 22:37:02
Last Changed By: Brian

Figure 52: Industry Value Added Services:I14 Maintain Schedule for content delivery (Use Case Diagram)

I15 Accept content from other SciX VAS
Type: Use Case Diagram
Page Ref: UCD
Date Last Changed: 02/11/2002 22:42:57
Last Changed By: Brian

Figure 53: Industry Value Added Services:I15 Accept content from other SciX VAS (Use Case Diagram)

I17 Schedule automatic delivery of content between Services
Type: Use Case Diagram
Page Ref: UCD
Date Last Changed: 02/11/2002 22:44:55
Last Changed By: Brian

Figure 54: Industry Value Added Services:I17 Schedule automatic delivery of content between Services (Use Case Diagram)

I18 Apply presentation format before delivery
Type: Use Case Diagram
Page Ref: UCD
Date Last Changed: 02/11/2002 22:46:30
Last Changed By: Brian

Figure 55: Industry Value Added Services:I18 Apply presentation format before delivery (Use Case Diagram)

I19 Notify Author of use of material
Type: Use Case Diagram
Page Ref: UCD
Date Last Changed: 02/11/2002 22:39:53
Last Changed By: Brian

Figure 56: Industry Value Added Services:I19 Notify Author of use of material (Use Case Diagram)

I20 Notify participants
Type: Use Case Diagram
Page Ref: UCD
Date Last Changed: 02/11/2002 22:48:26
Last Changed By: Brian

Figure 57: Industry Value Added Services:I20 Notify participants (Use Case Diagram)

1.4 JOURNAL MANAGEMENT USE CASES

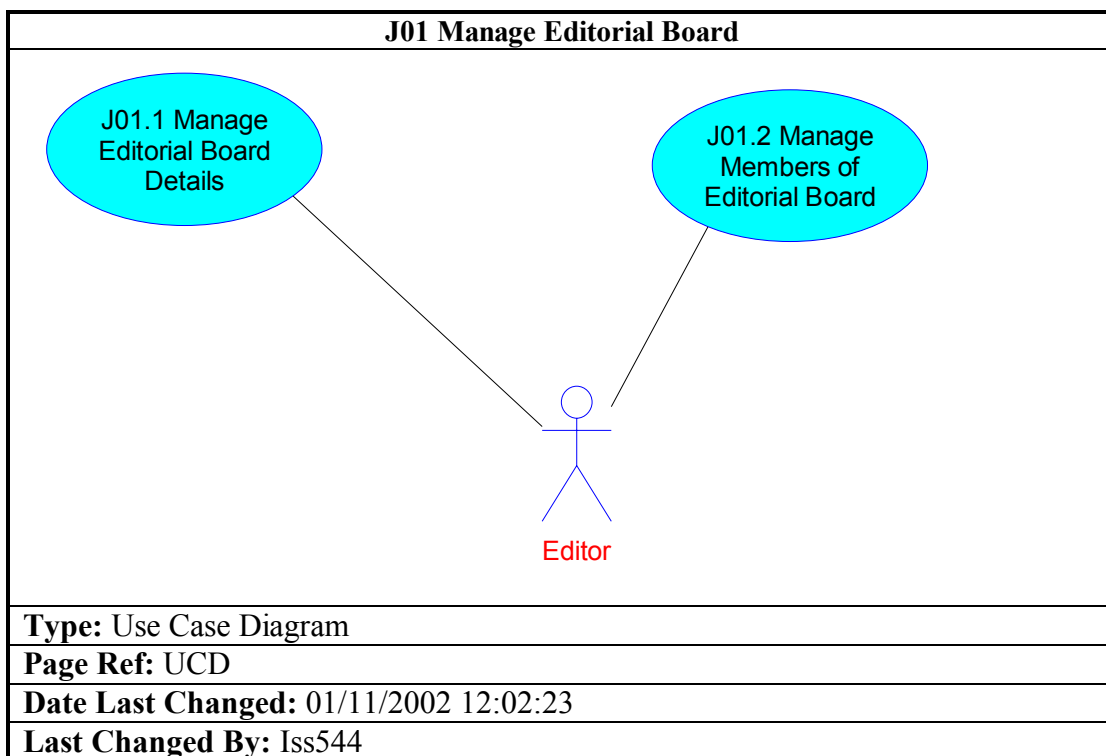


Figure 58: Journal Management:J01 Manage Editorial Board (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Editor	

Objects of Type 'Use Case'

Name	Page
J01.2 Manage Members of Editorial Board	
J01.1 Manage Editorial Board Details	

J03 Plan Journal Policy & Issues	
Type: Use Case Diagram	
Page Ref: UCD	
Date Last Changed: 02/11/2002 22:58:07	
Last Changed By: Brian	

Figure 59: Journal Management:J03 Plan Journal Policy & Issues (Use Case Diagram)

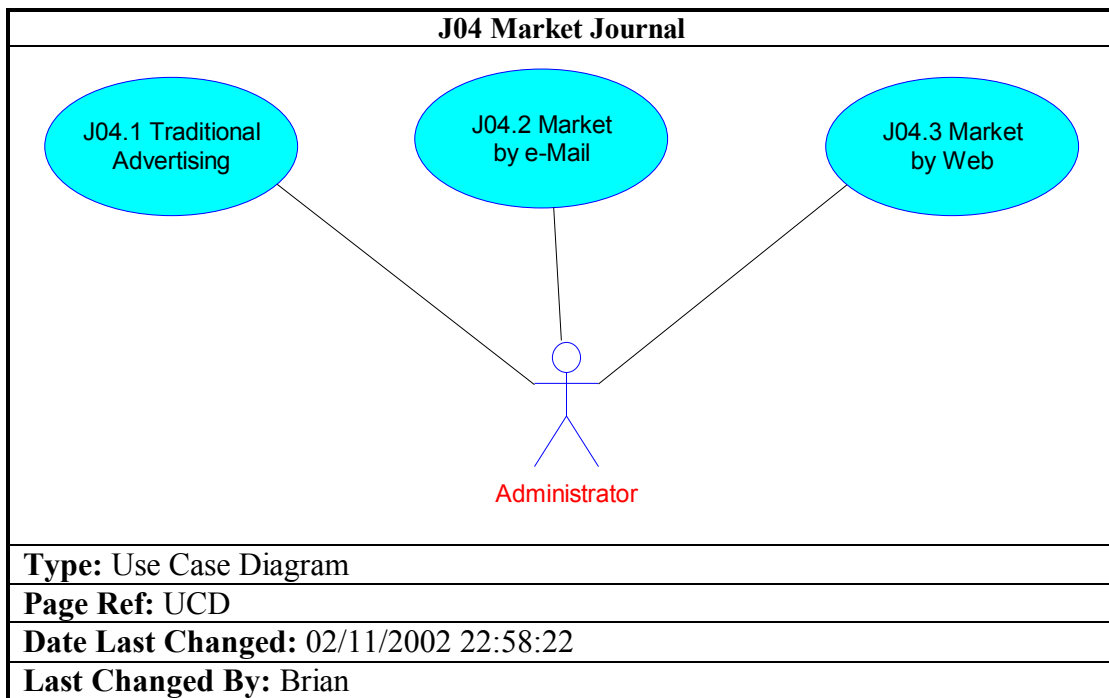


Figure 60: Journal Management:J04 Market Journal (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Administrat or	

Objects of Type 'Use Case'

Name	Page
J04.2 Market by e-Mail	
J04.3 Market by Web	
J04.1 Traditional Advertising	

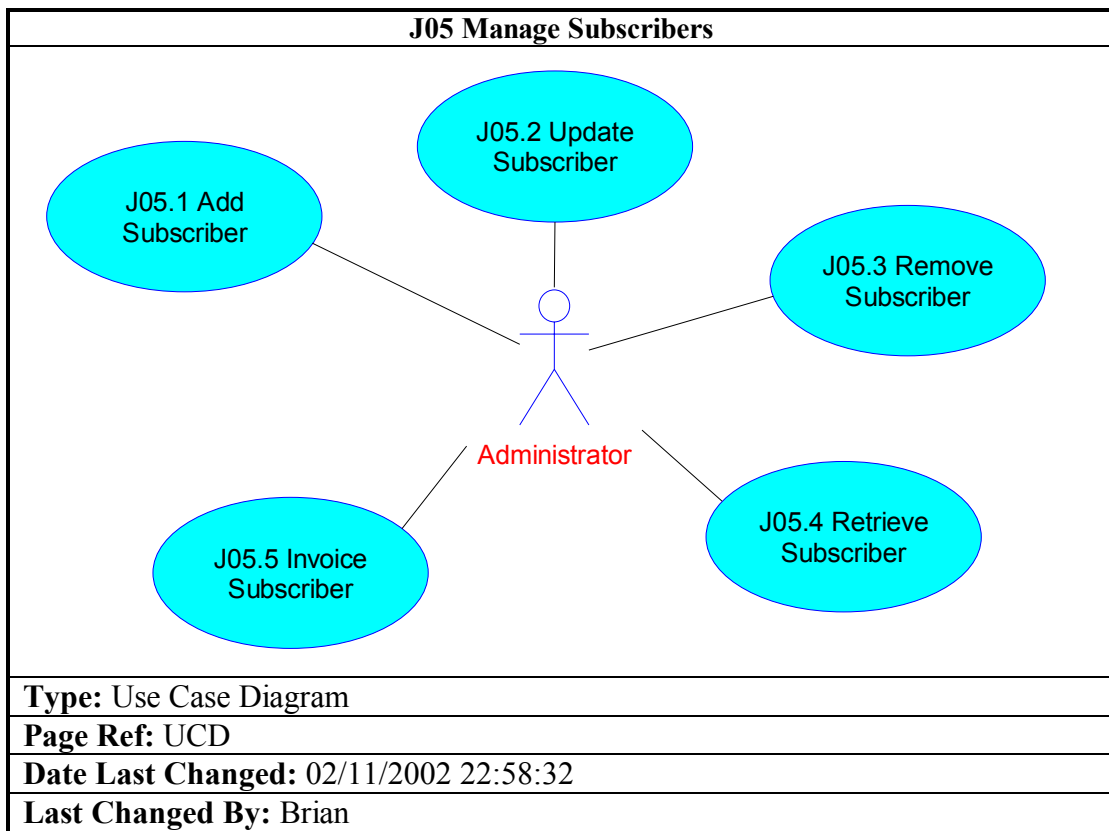


Figure 61: Journal Management:J05 Manage Subscribers (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Administrat or	

Objects of Type 'Use Case'

Name	Page
J05.1 Add Subscriber	
J05.4 Retrieve Subscriber	
J05.2 Update Subscriber	
J05.5 Invoice Subscriber	
J05.3 Remove Subscriber	

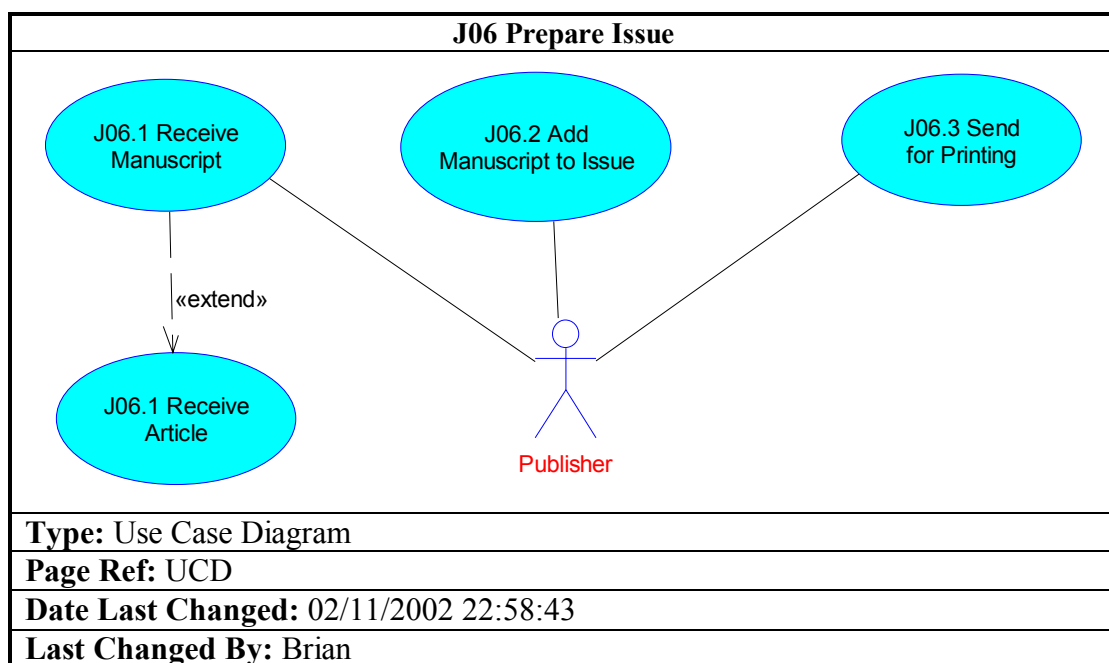


Figure 62: Journal Management:J06 Prepare Issue (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Publisher	

Objects of Type 'Use Case'

Name	Page
J06.1 Receive Manuscript	
J06.2 Add Manuscript to Issue	
J06.1 Receive Article	
J06.3 Send for Printing	

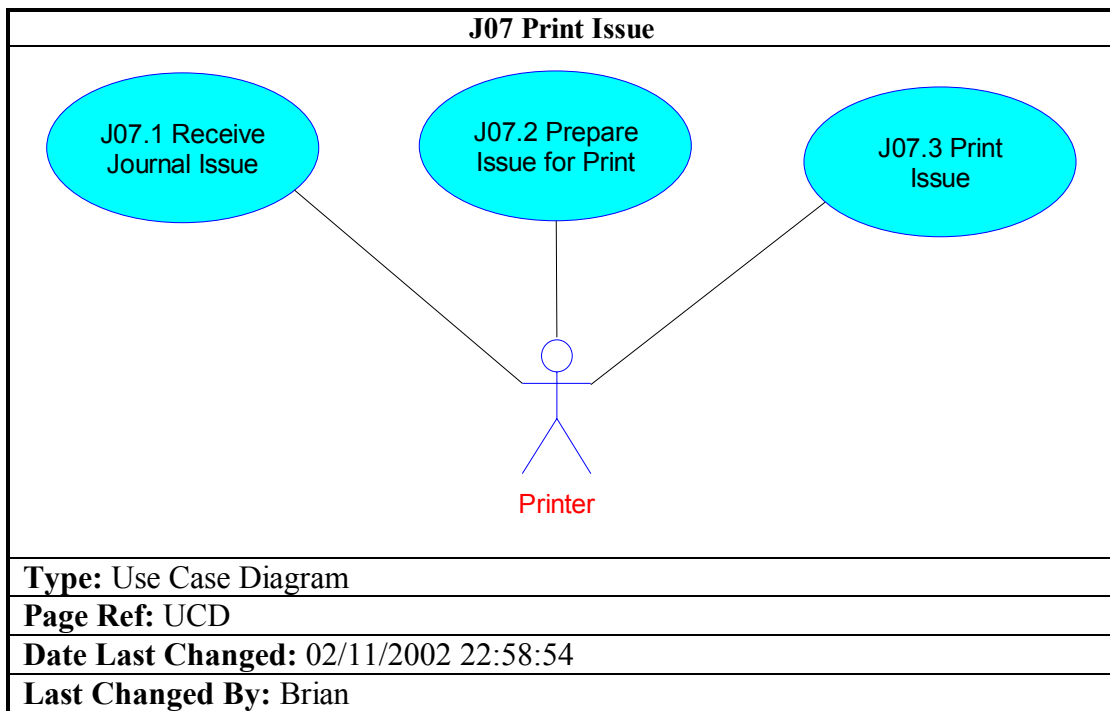


Figure 63: Journal Management:J07 Print Issue (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Printer	

Objects of Type 'Use Case'

Name	Page
J07.3 Print Issue	
J07.1 Receive Journal Issue	
J07.2 Prepare Issue for Print	

J08 Publish Journal
Type: Use Case Diagram
Page Ref: UCD
Date Last Changed: 02/11/2002 22:59:09
Last Changed By: Brian

Figure 64: Journal Management:J08 Publish Journal (Use Case Diagram)

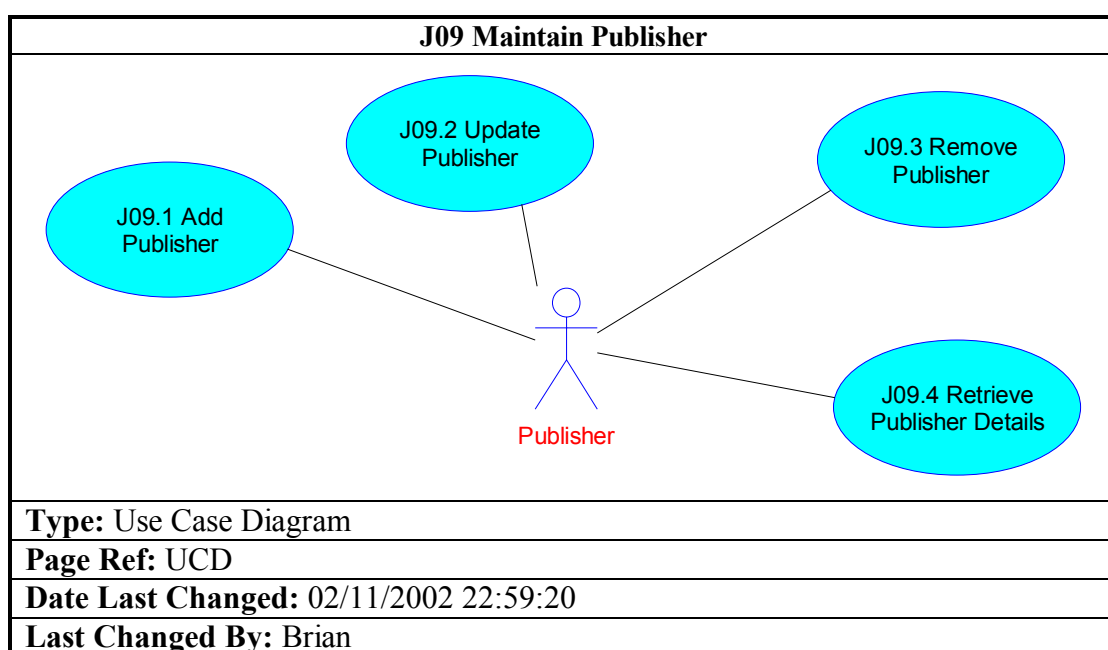


Figure 65: Journal Management:J09 Maintain Publisher (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Publisher	

Objects of Type 'Use Case'

Name	Page
J09.4 Retrieve Publisher Details	
J09.1 Add Publisher	
J09.2 Update Publisher	

Name	Page
J09.3 Remove Publisher	

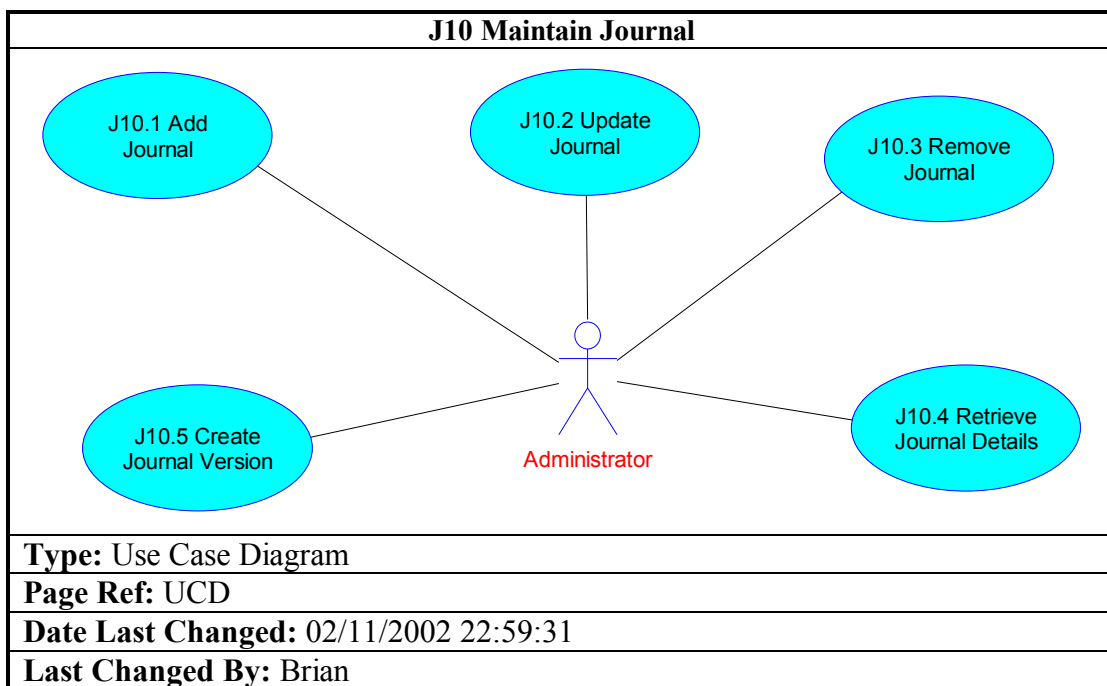


Figure 66: Journal Management:J10 Maintain Journal (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Administrat or	

Objects of Type 'Use Case'

Name	Page
J10.1 Add Journal	
J10.2 Update Journal	
J10.3 Remove Journal	
J10.4 Retrieve Journal Details	
J10.5 Create Journal Version	

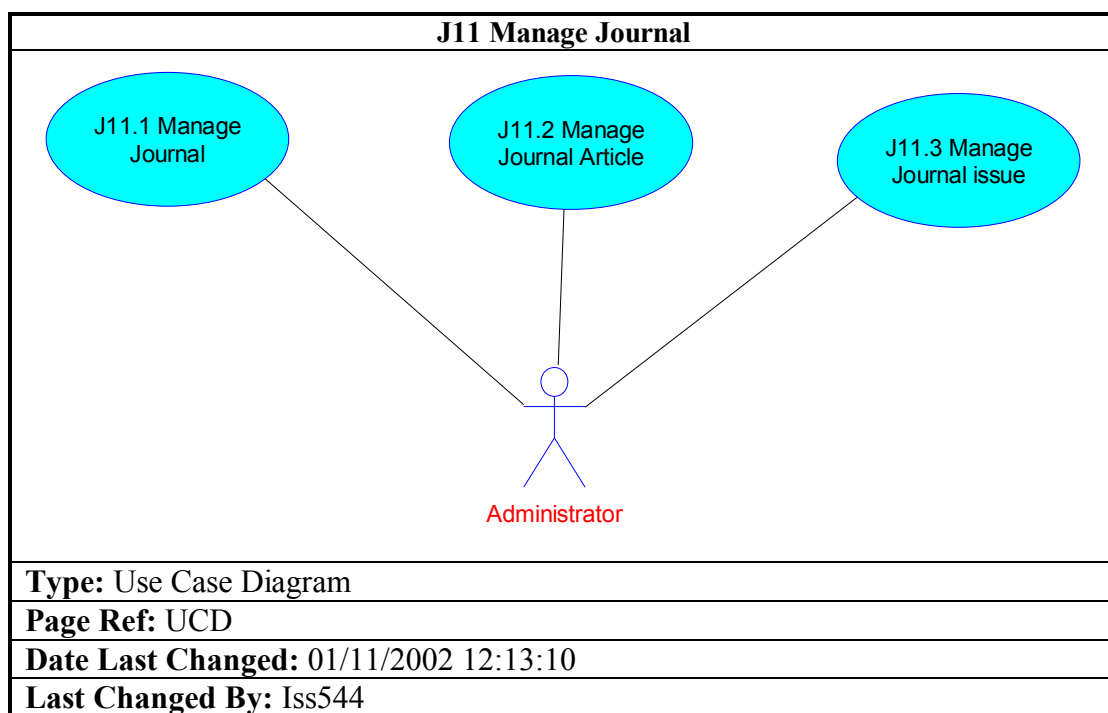


Figure 67: Journal Management:J11 Manage Journal (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Administrat or	

Objects of Type 'Use Case'

Name	Page
J11.2 Manage Journal Article	
J11.3 Manage Journal issue	
J11.1 Manage Journal	

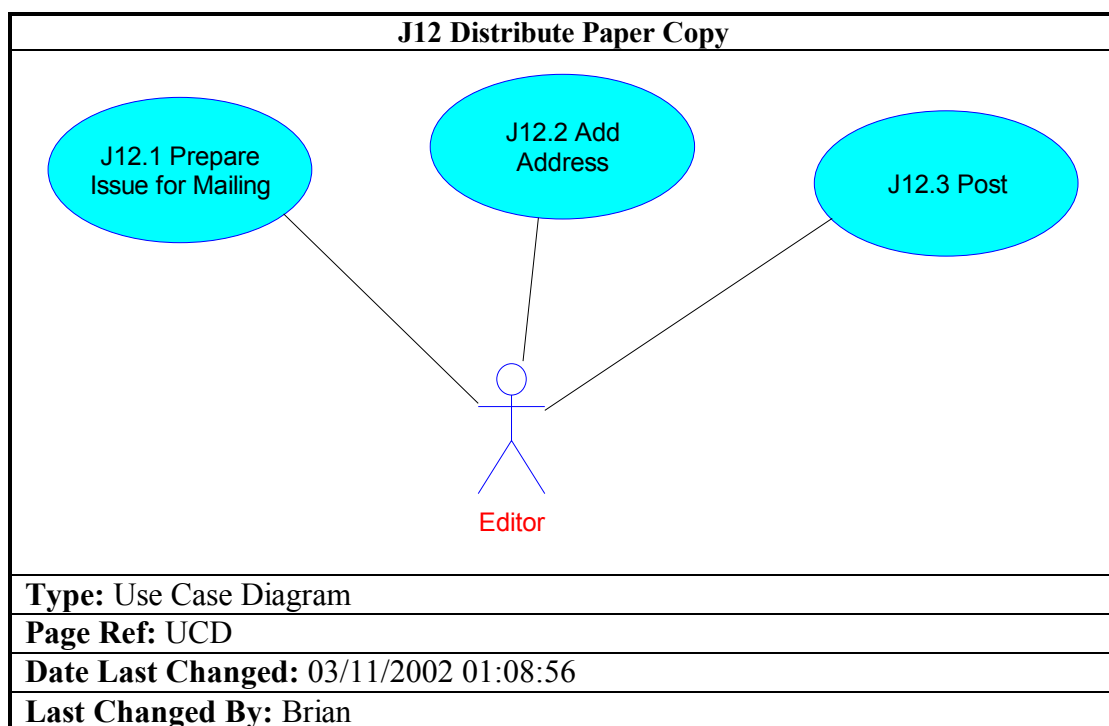


Figure 68: Journal Management:J12 Distribute Paper Copy (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Editor	

Objects of Type 'Use Case'

Name	Page
J12.3 Post	
J12.1 Prepare Issue for Mailing	
J12.2 Add Address	

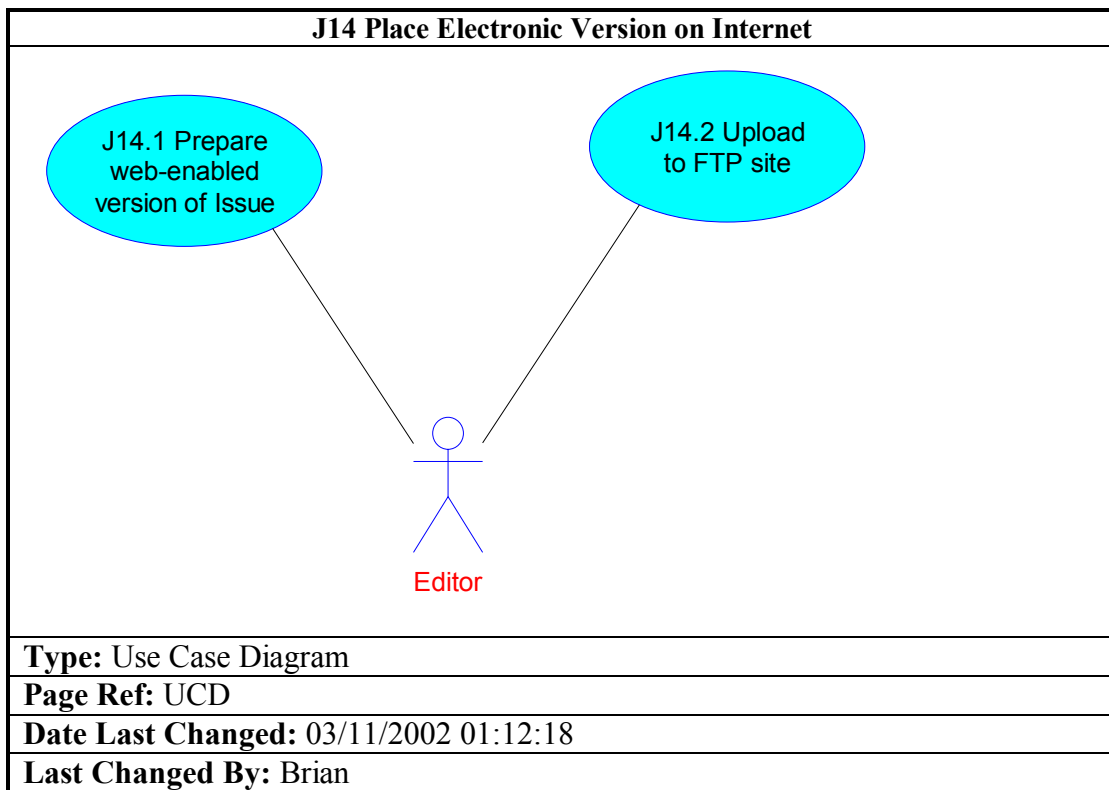


Figure 69: Journal Management:J14 Place Electronic Version on Internet (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Editor	

Objects of Type 'Use Case'

Name	Page
J14.2 Upload to FTP site	
J14.1 Prepare web-enabled version of Issue	

1.5 READER MANAGEMENT USE CASES

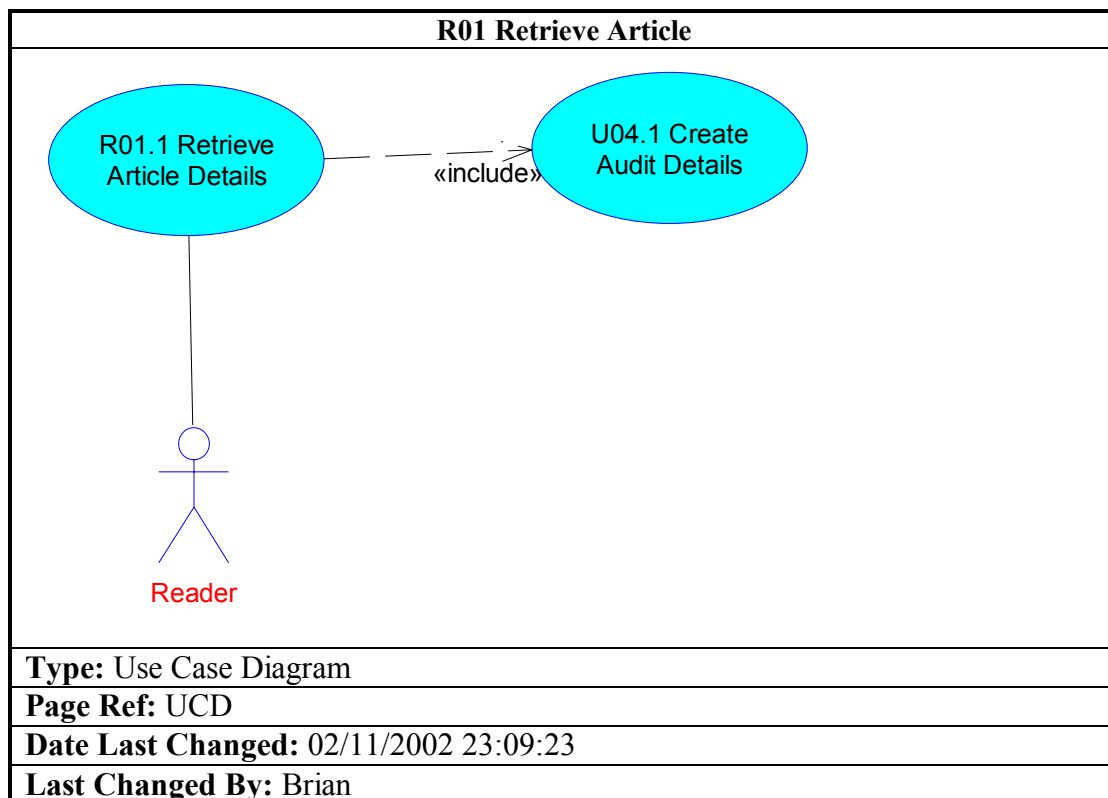


Figure 70: Reader Management:R01 Retrieve Article (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Reader	

Objects of Type 'Use Case'

Name	Page
U04.1 Create Audit Details	
R01.1 Retrieve Article Details	

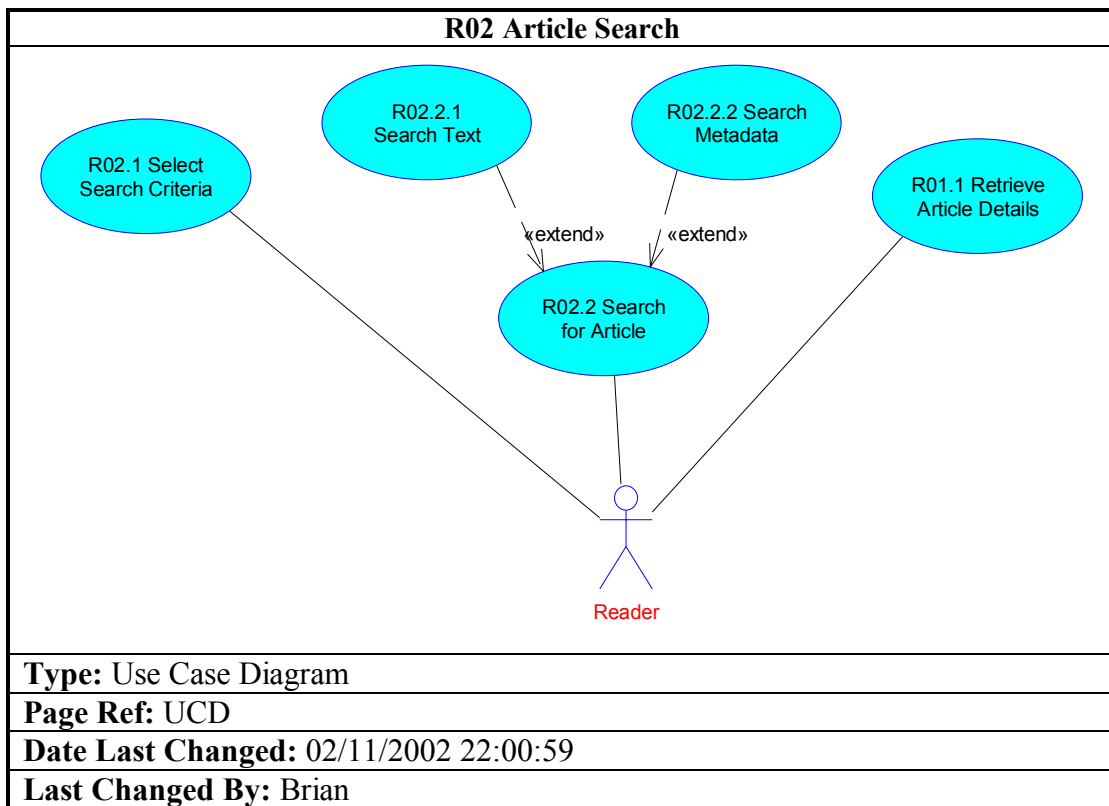


Figure 71: Reader Management:R02 Article Search (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Reader	

Objects of Type 'Use Case'

Name	Page
R02.2 Search for Article	
R01.1 Retrieve Article Details	
R02.2.1 Search Text	
R02.2.2 Search Metadata	
R02.1 Select Search Criteria	

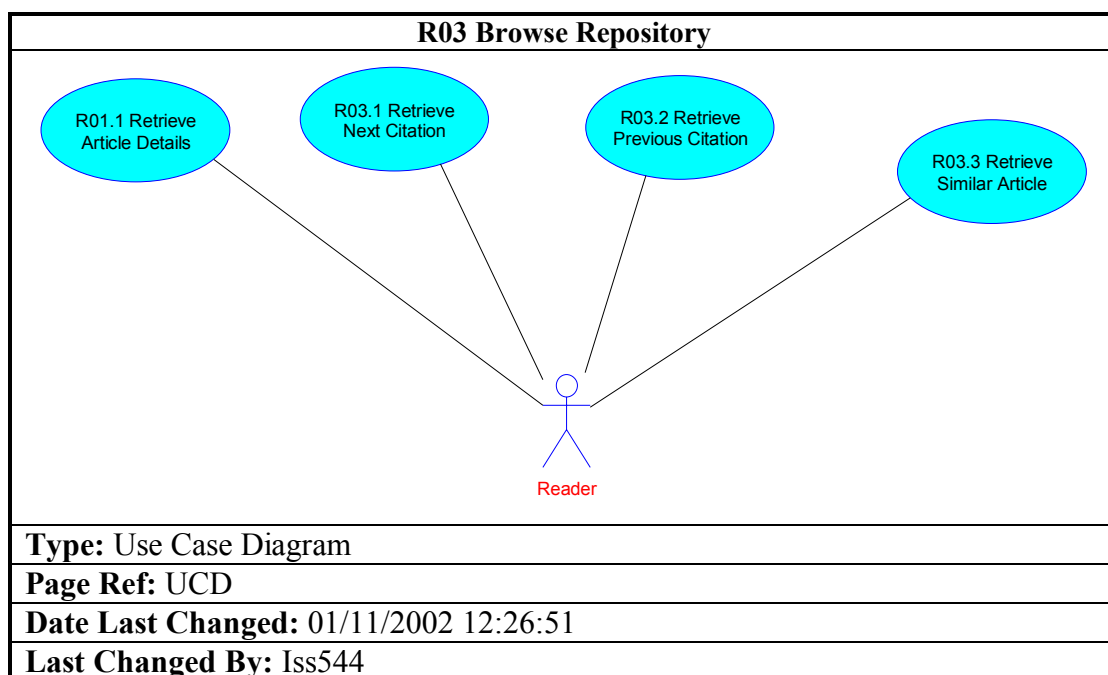


Figure 72: Reader Management:R03 Browse Repository (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Reader	

Objects of Type 'Use Case'

Name	Page
R03.1 Retrieve Next Citation	
R03.2 Retrieve Previous Citation	
R03.3 Retrieve Similar Article	
R01.1 Retrieve Article Details	

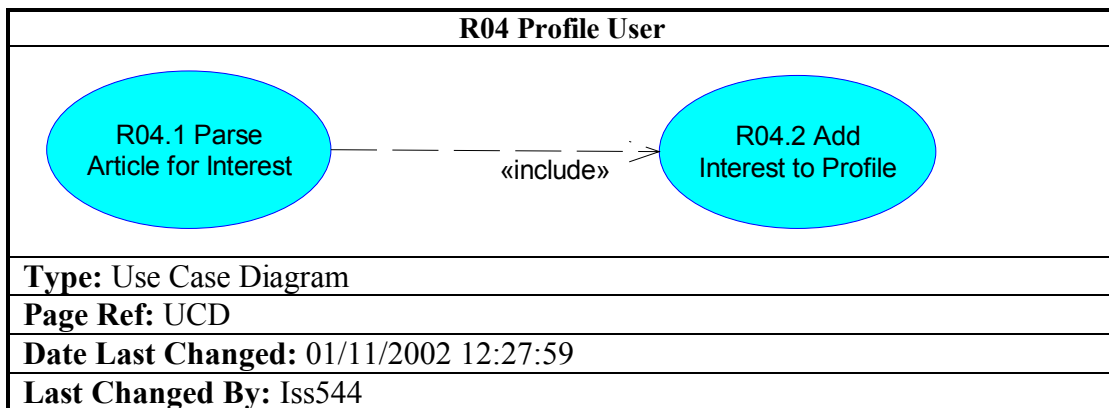


Figure 73: Reader Management:R04 Profile User (Use Case Diagram)

Objects of Type 'Use Case'

Name	Page
R04.1 Parse Article for Interest	
R04.2 Add Interest to Profile	

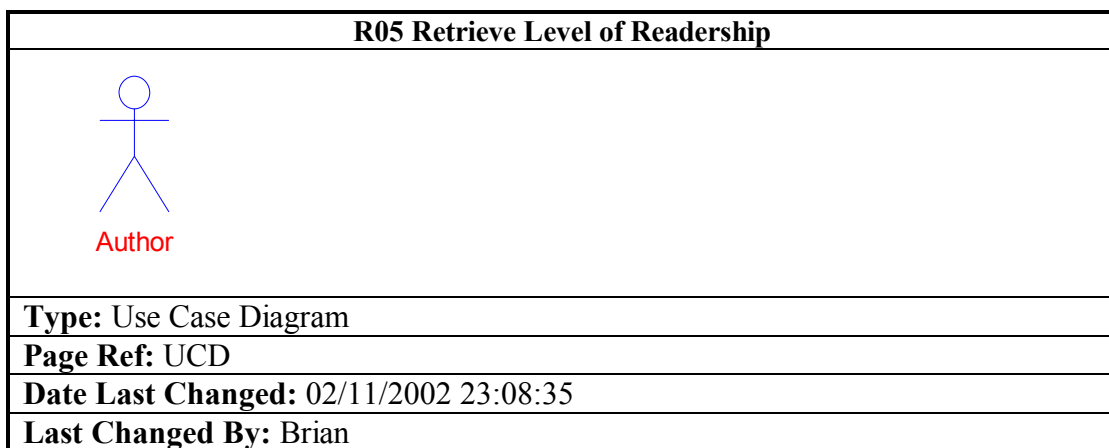


Figure 74: Reader Management:R05 Retrieve Level of Readership (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Author	

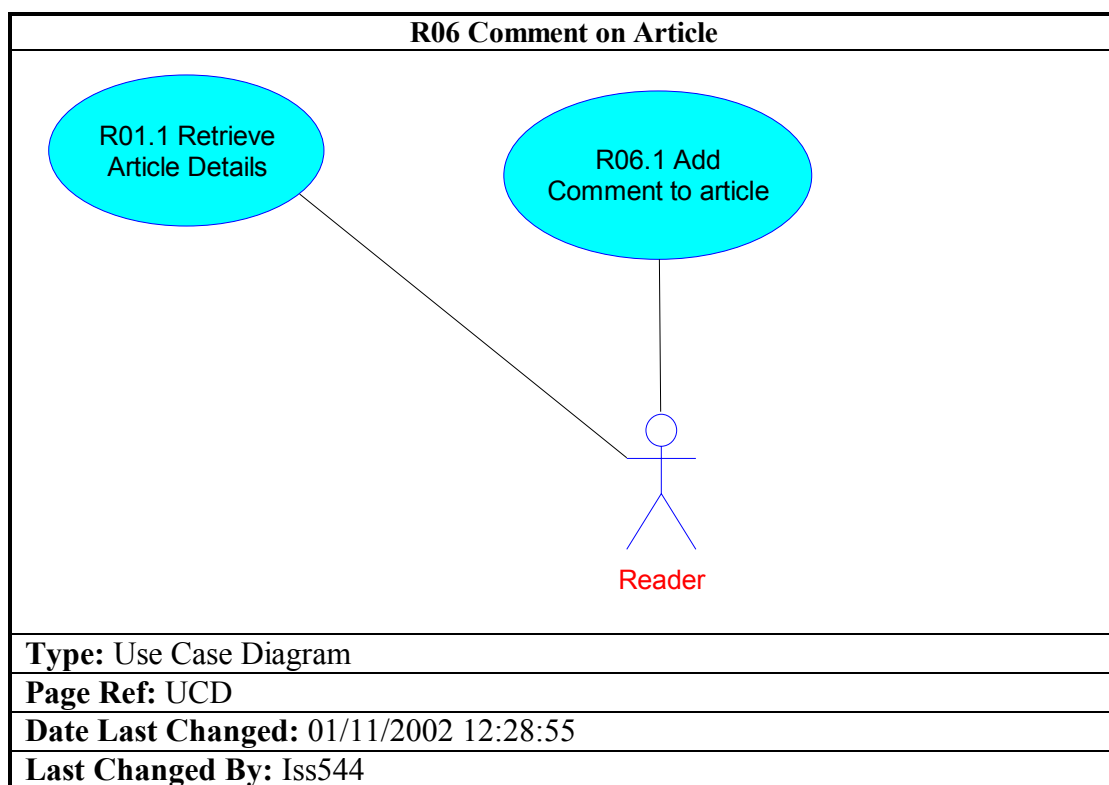


Figure 75: Reader Management:R06 Comment on Article (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Reader	

Objects of Type 'Use Case'

Name	Page
R01.1 Retrieve Article Details	
R06.1 Add Comment to article	

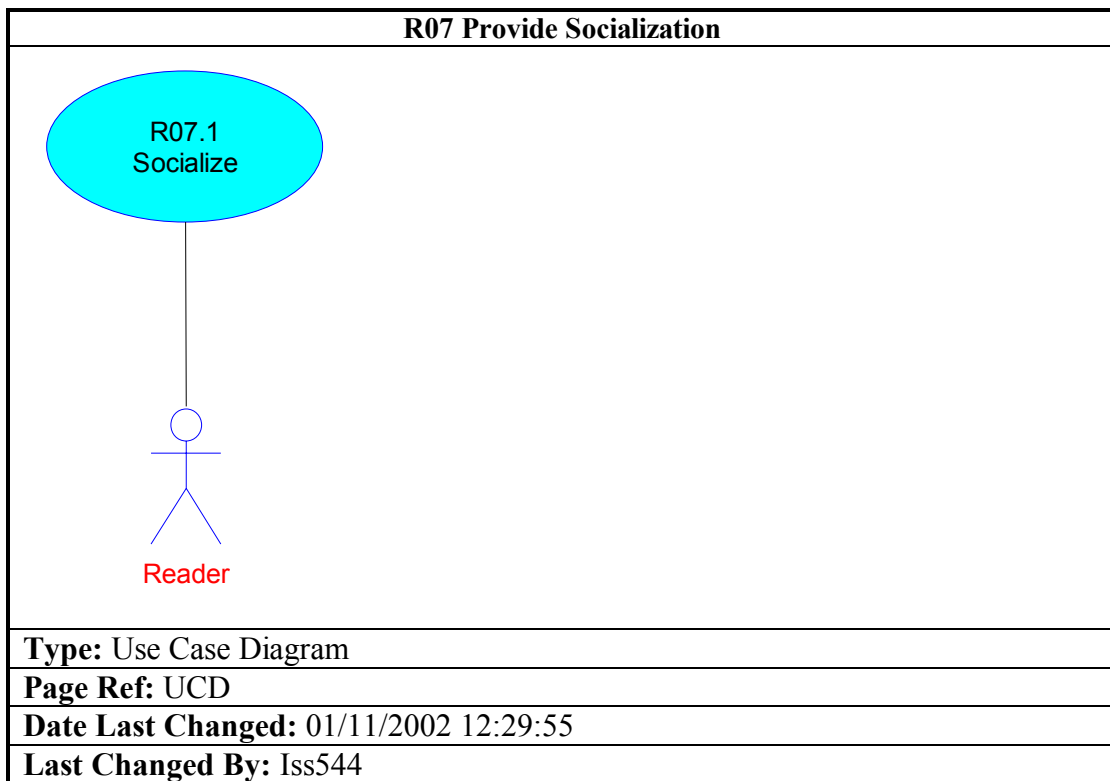


Figure 76: Reader Management:R07 Provide Socialization (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Reader	

Objects of Type 'Use Case'

Name	Page
R07.1 Socialize	

1.6 USER MANAGEMENT USE CASES

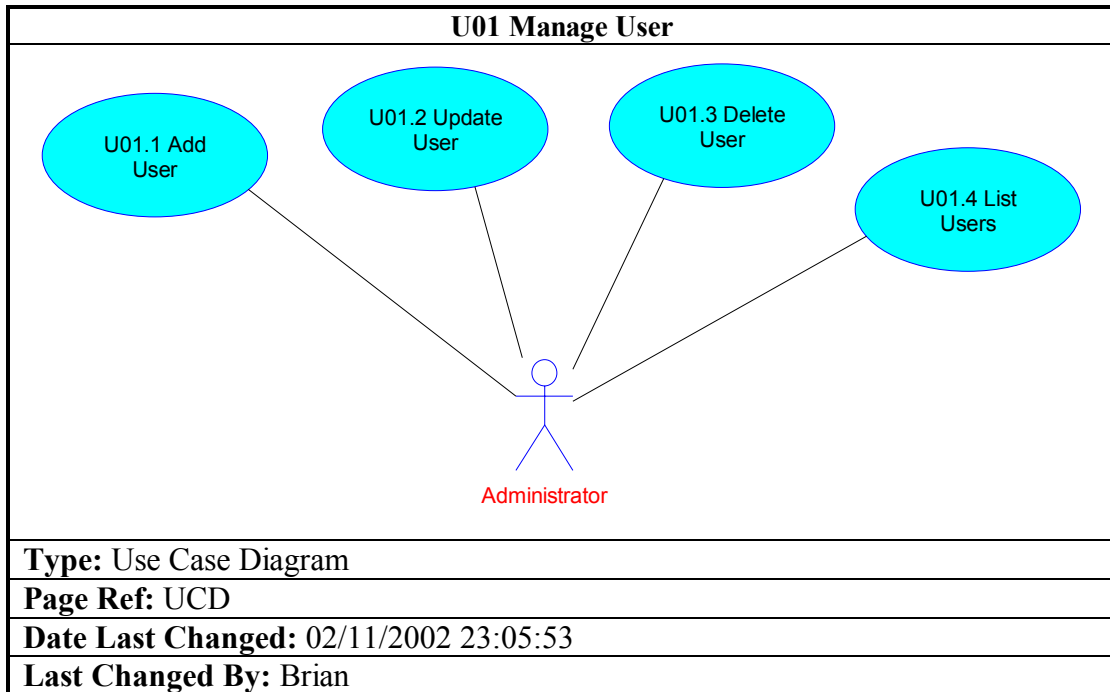


Figure 77: User Management:U01 Manage User (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Administrator	

Objects of Type 'Use Case'

Name	Page
U01.3 Delete User	
U01.4 List Users	
U01.1 Add User	
U01.2 Update User	

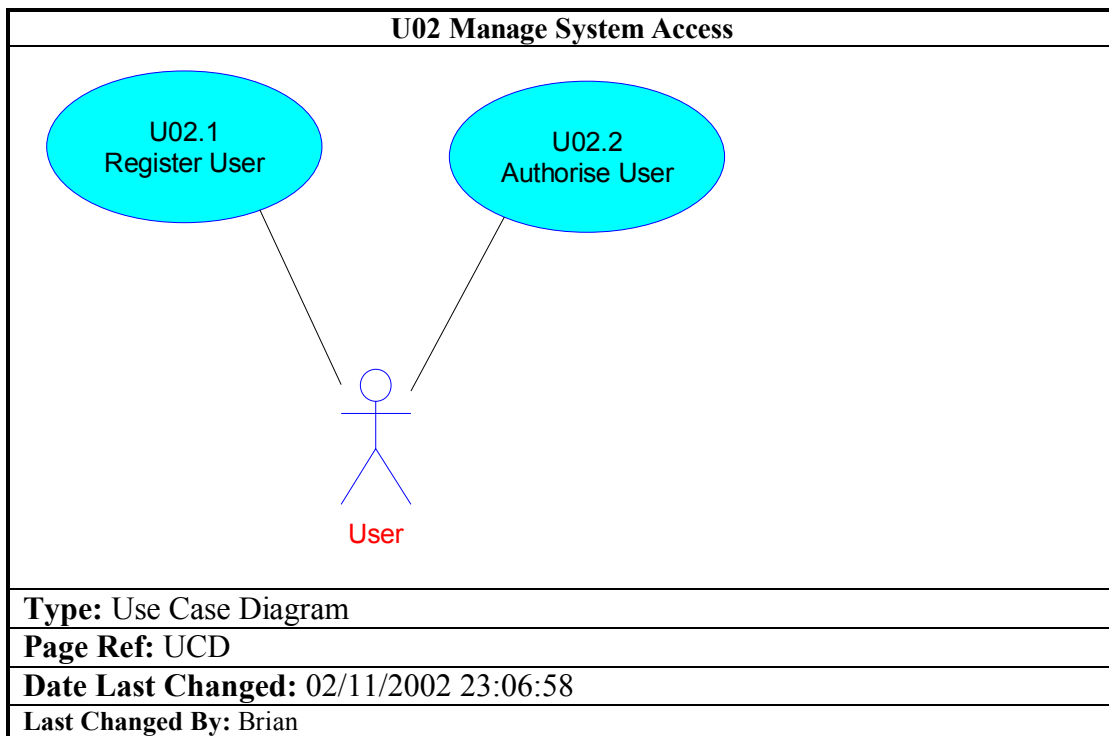


Figure 78: User Management:U02 Manage System Access (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
User	

Objects of Type 'Use Case'

Name	Page
U02.2 Authorise User	
U02.1 Register User	

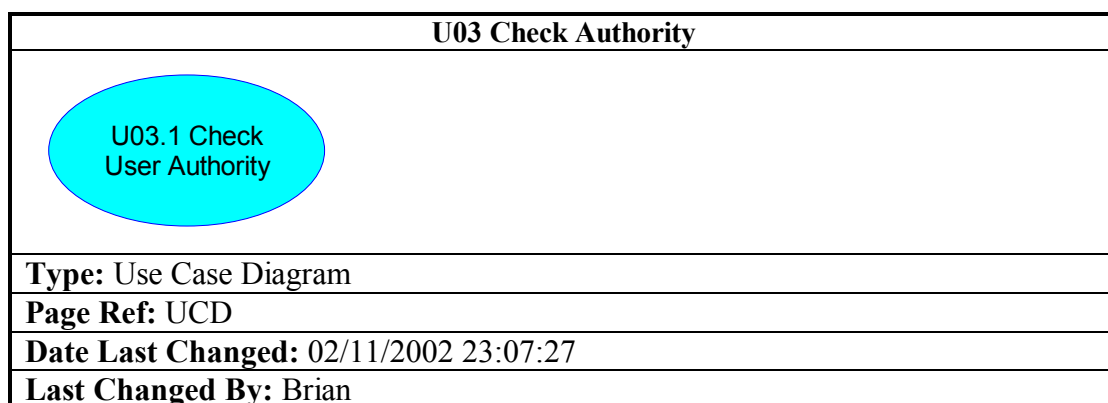


Figure 79: User Management:U03 Check Authority (Use Case Diagram)

Objects of Type 'Use Case'

Name	Page
U03.1 Check User Authority	

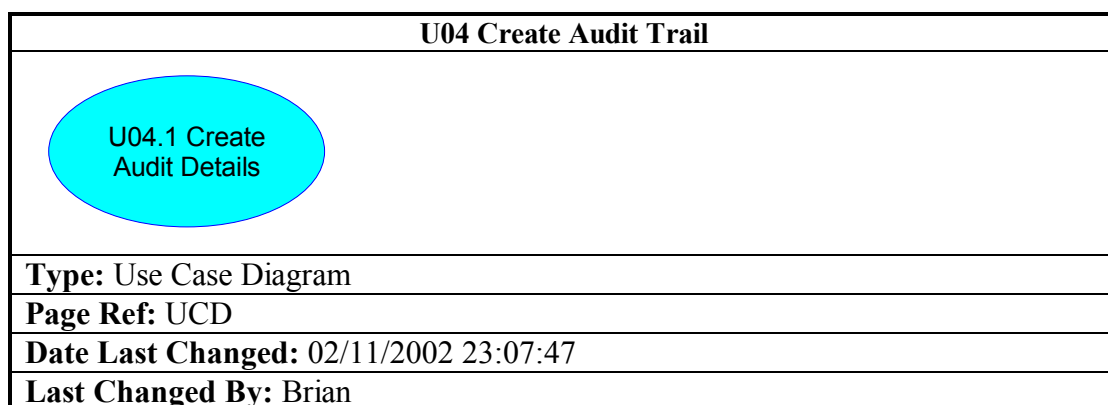


Figure 80: User Management:U04 Create Audit Trail (Use Case Diagram)

Objects of Type 'Use Case'

Name	Page
U04.1 Create Audit Details	

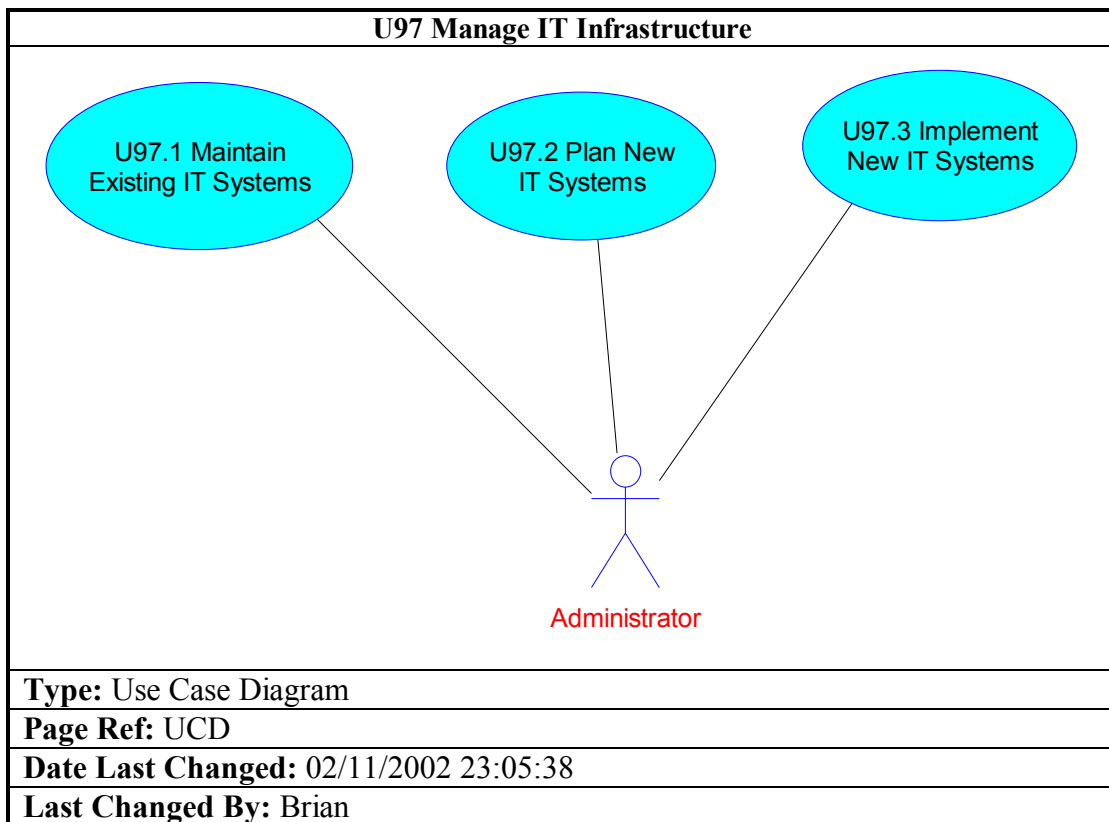


Figure 81: User Management:U97 Manage IT Infrastructure (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Administrator	

Objects of Type 'Use Case'

Name	Page
U97.2 Plan New IT Systems	
U97.3 Implement New IT Systems	
U97.1 Maintain Existing IT Systems	

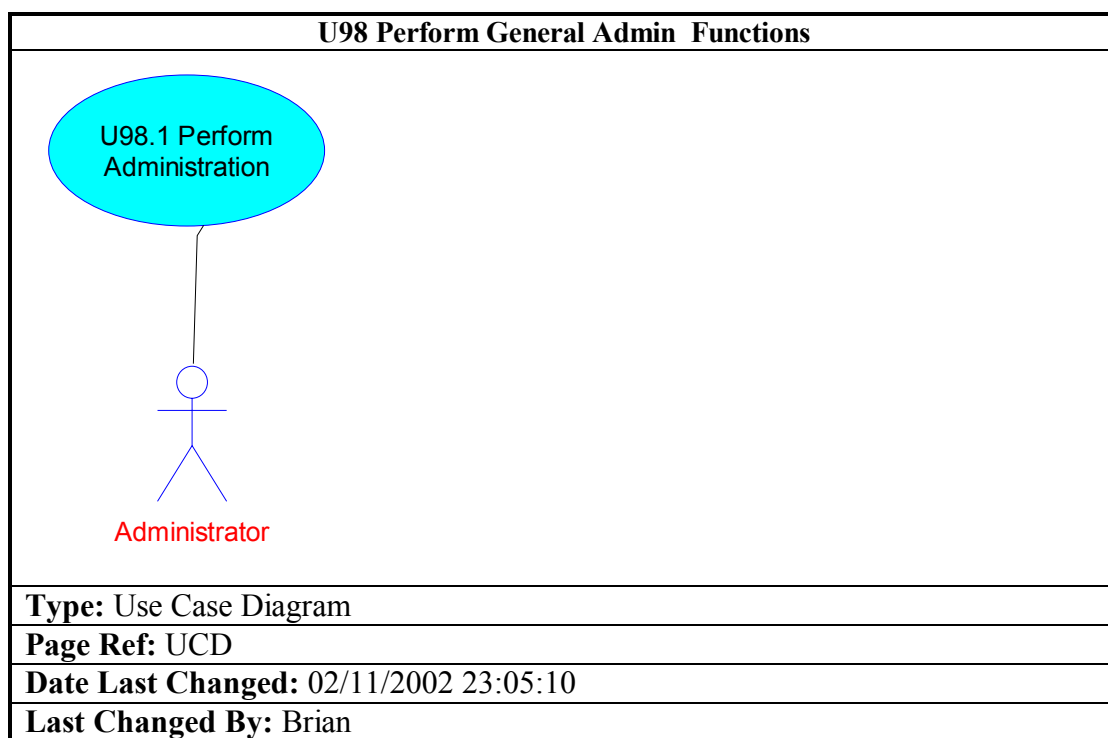


Figure 82: User Management: U98 Perform General Admin Functions (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Administrator	

Objects of Type 'Use Case'

Name	Page
U98.1 Perform Administration	

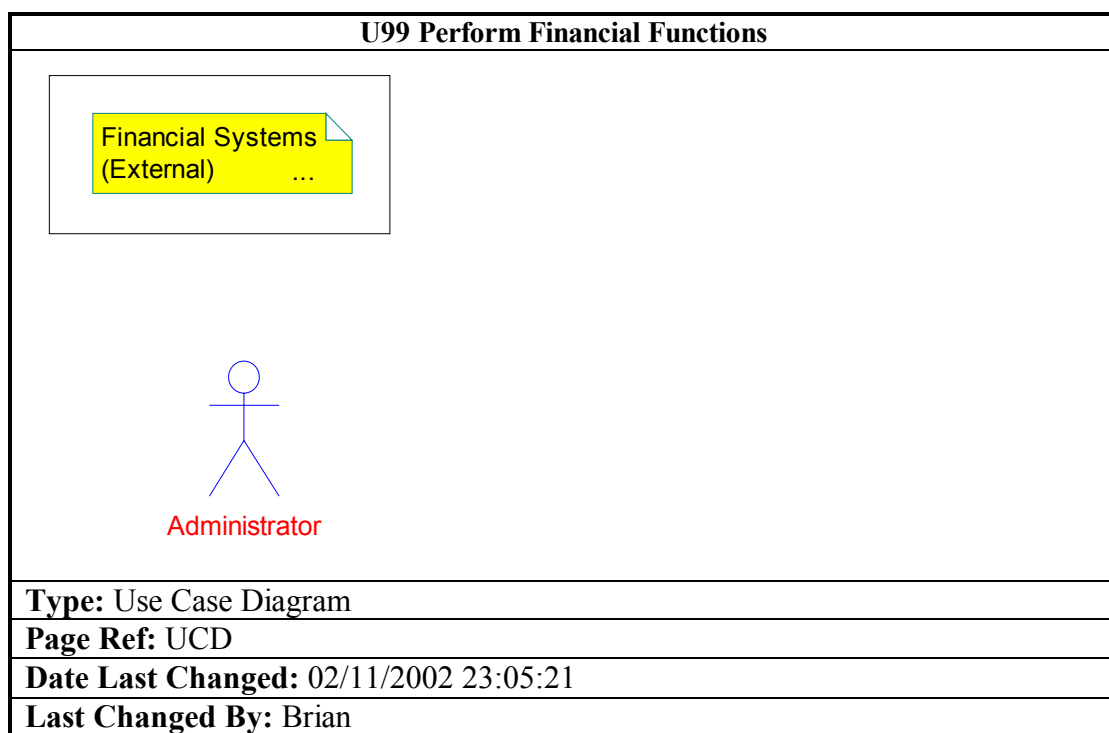


Figure 83: User Management:U99 Perform Financial Functions (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Administrator	

1.7 REVIEW MANAGEMENT USE CASES

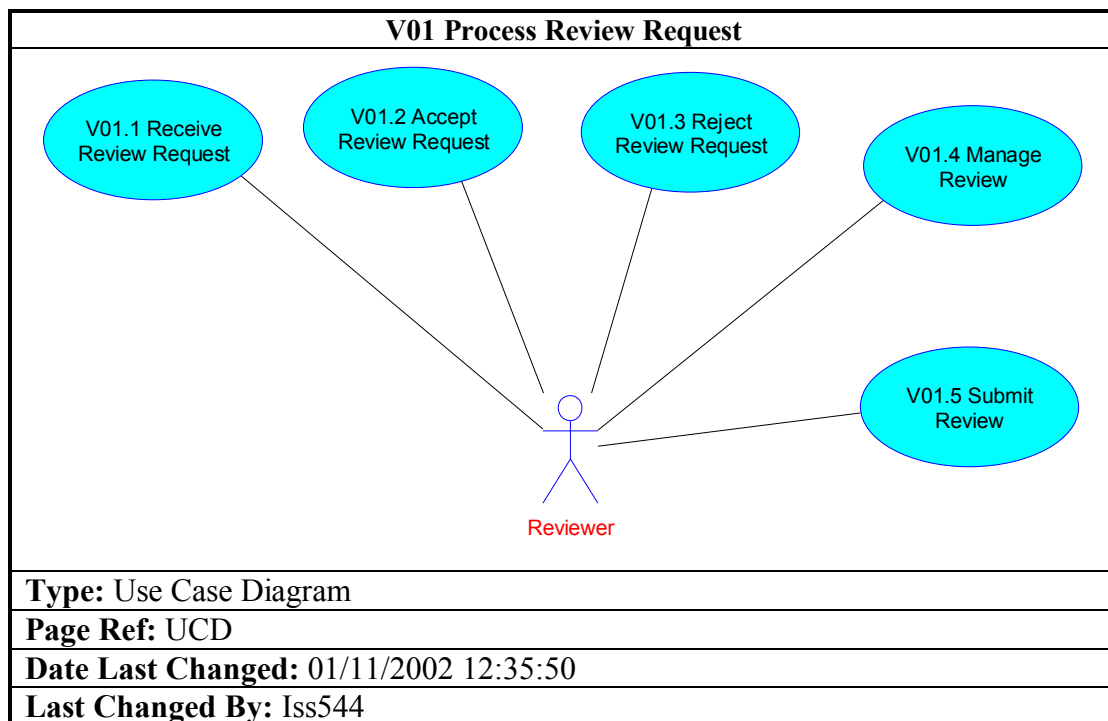


Figure 84: Review Management: V01 Process Review Request (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Reviewer	

Objects of Type 'Use Case'

Name	Page
V01.1 Receive Review Request	
V01.2 Accept Review Request	
V01.3 Reject Review Request	
V01.4 Manage Review	
V01.5 Submit Review	

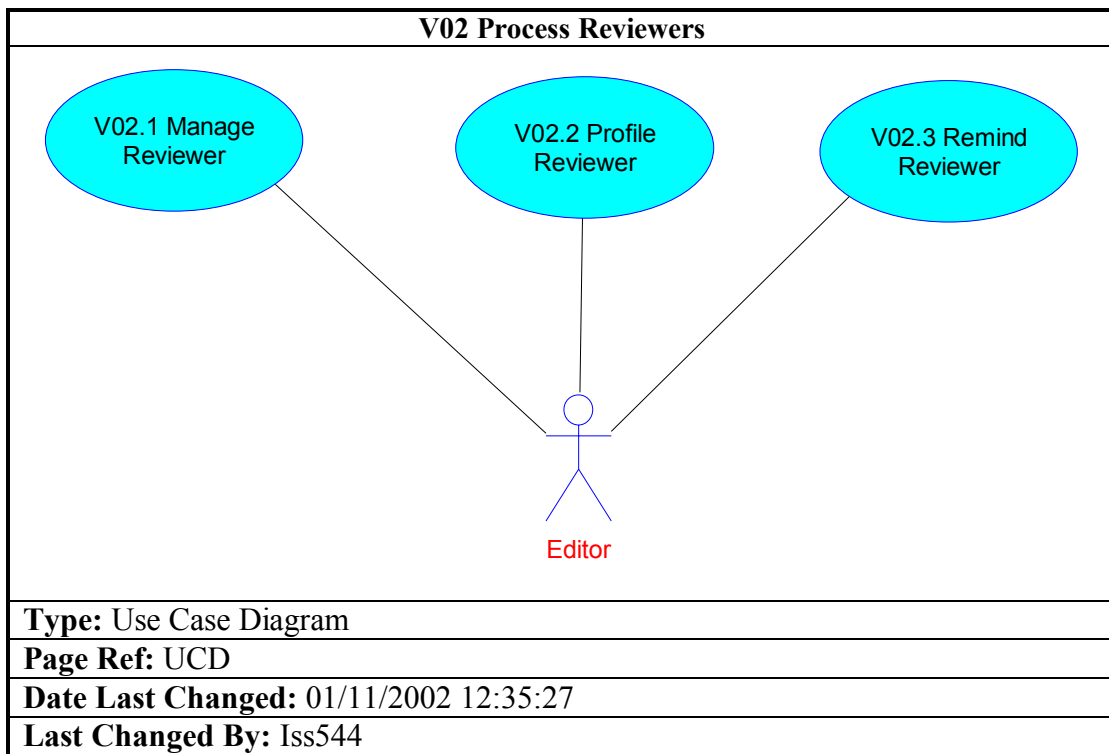


Figure 85: Review Management: V02 Process Reviewers (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Editor	

Objects of Type 'Use Case'

Name	Page
V02.2 Profile Reviewer	
V02.3 Remind Reviewer	
V02.1 Manage Reviewer	

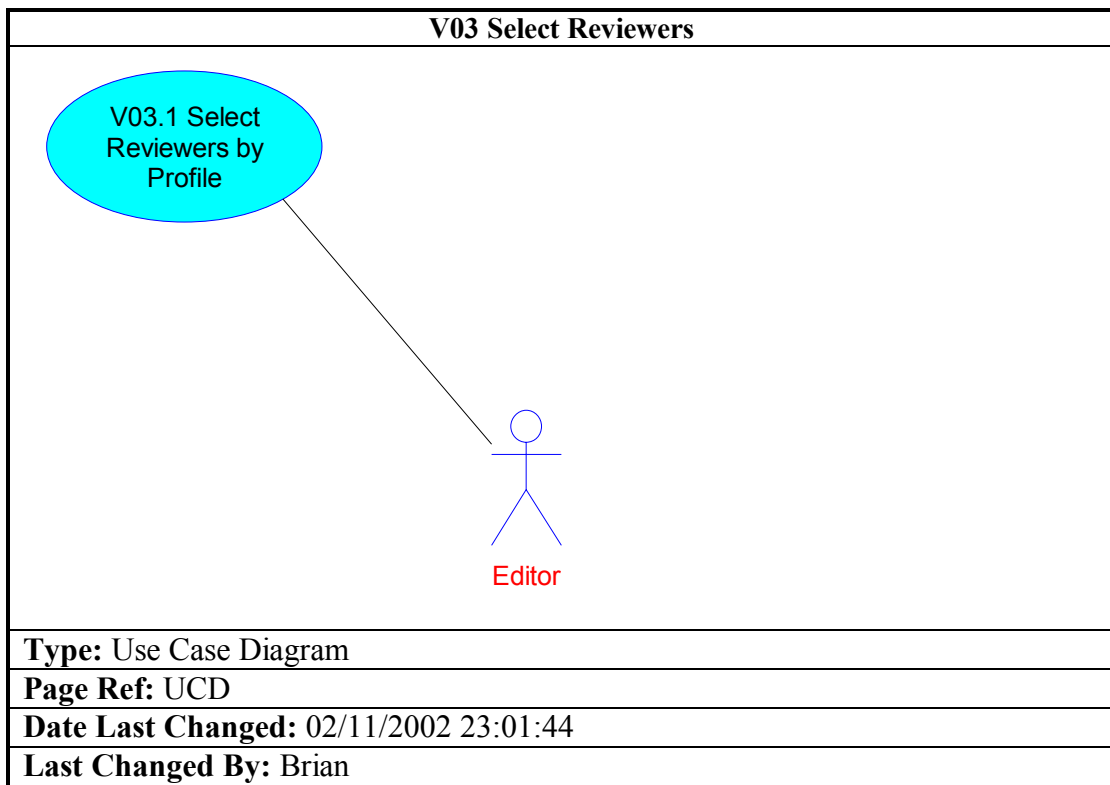


Figure 86: Review Management: V03 Select Reviewers (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Editor	

Objects of Type 'Use Case'

Name	Page
V03.1 Select Reviewers by Profile	

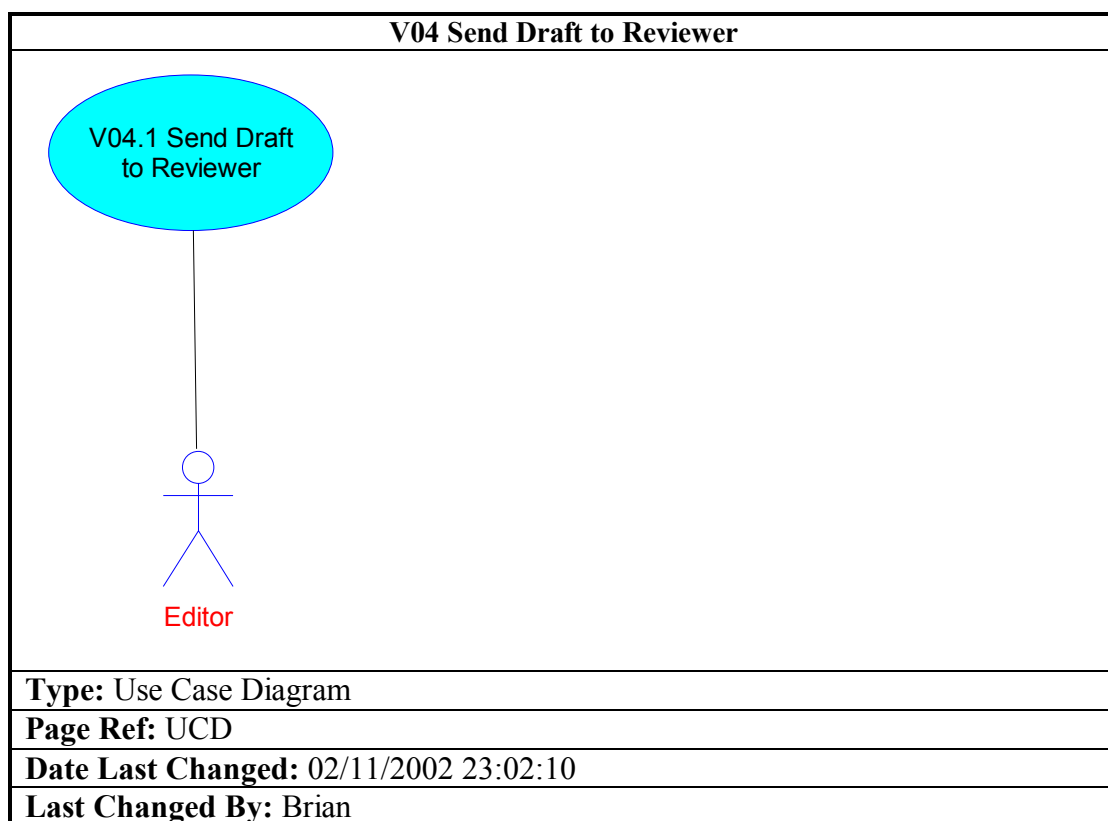


Figure 87: Review Management: V04 Send Draft to Reviewer (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Editor	

Objects of Type 'Use Case'

Name	Page
V04.1 Send Draft to Reviewer	

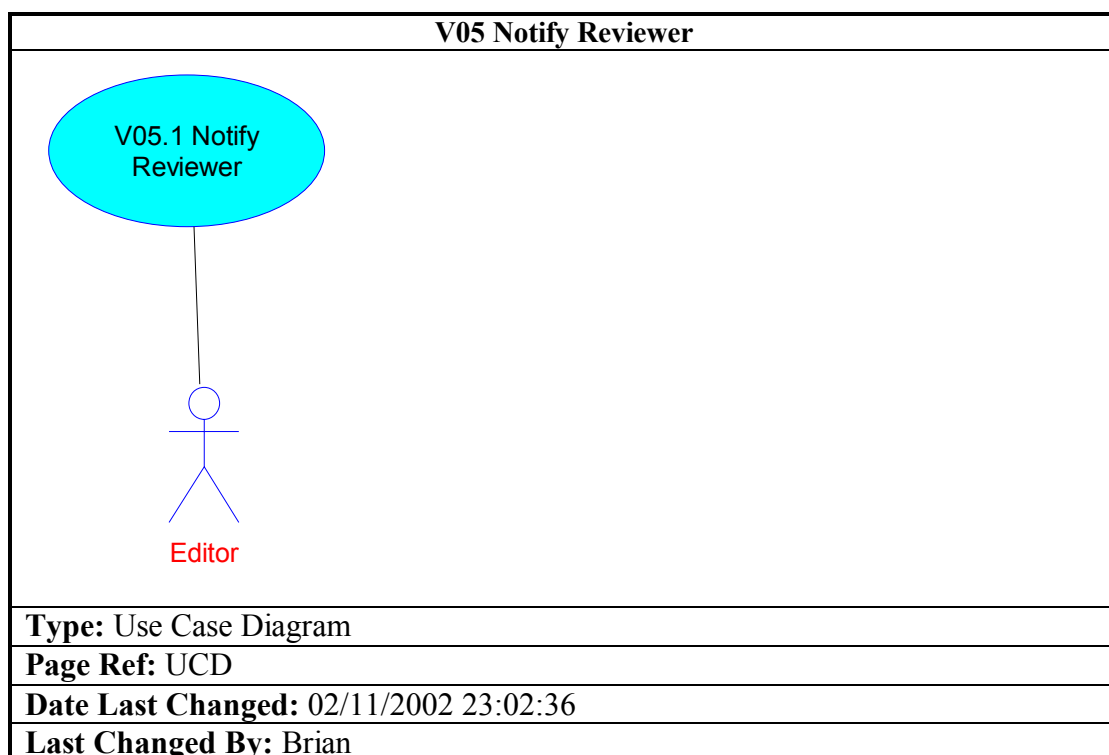


Figure 88: Review Management: V05 Notify Reviewer (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Editor	

Objects of Type 'Use Case'

Name	Page
V05.1 Notify Reviewer	

V06 Accept Review Request
Type: Use Case Diagram
Page Ref: UCD
Date Last Changed: 02/11/2002 23:02:59
Last Changed By: Brian

Figure 89: Review Management:V06 Accept Review Request (Use Case Diagram)

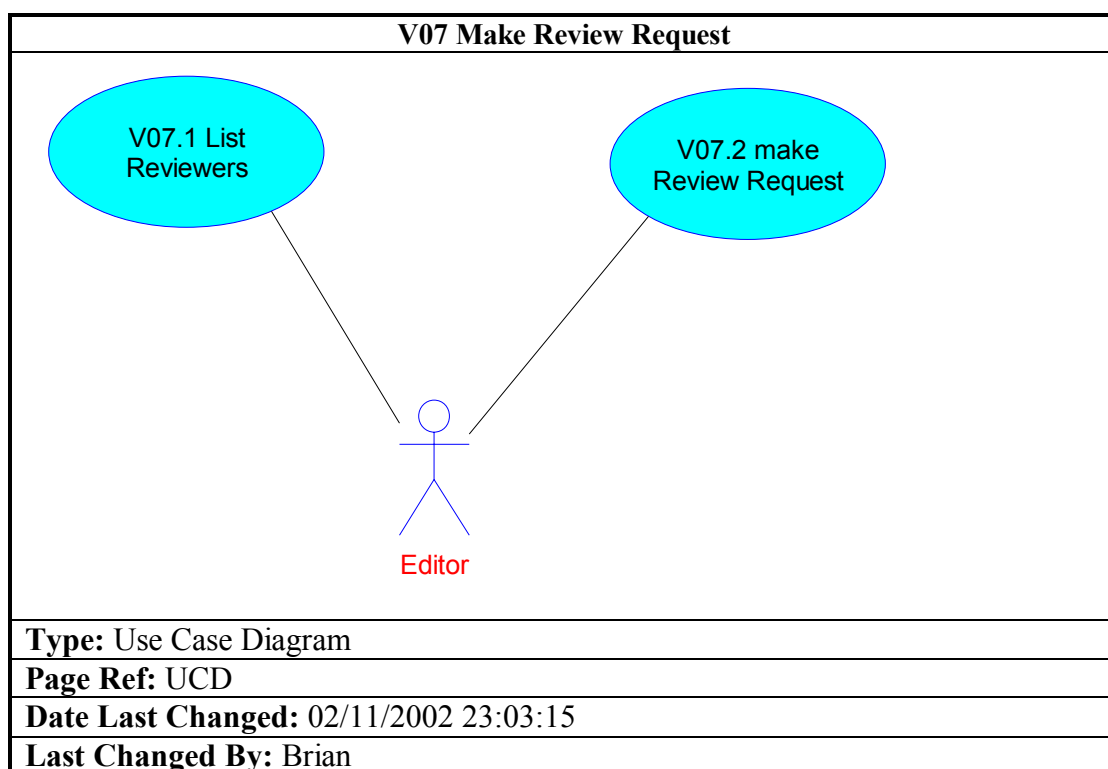


Figure 90:Review Management:V07 Make Review Request (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Editor	

Objects of Type 'Use Case'

Name	Page
V07.1 List Reviewers	
V07.2 make Review Request	

V08 Decline Review Request
Type: Use Case Diagram
Page Ref: UCD
Date Last Changed: 02/11/2002 23:03:25
Last Changed By: Brian

Figure 91: Review Management: V08 Decline Review Request (Use Case Diagram)

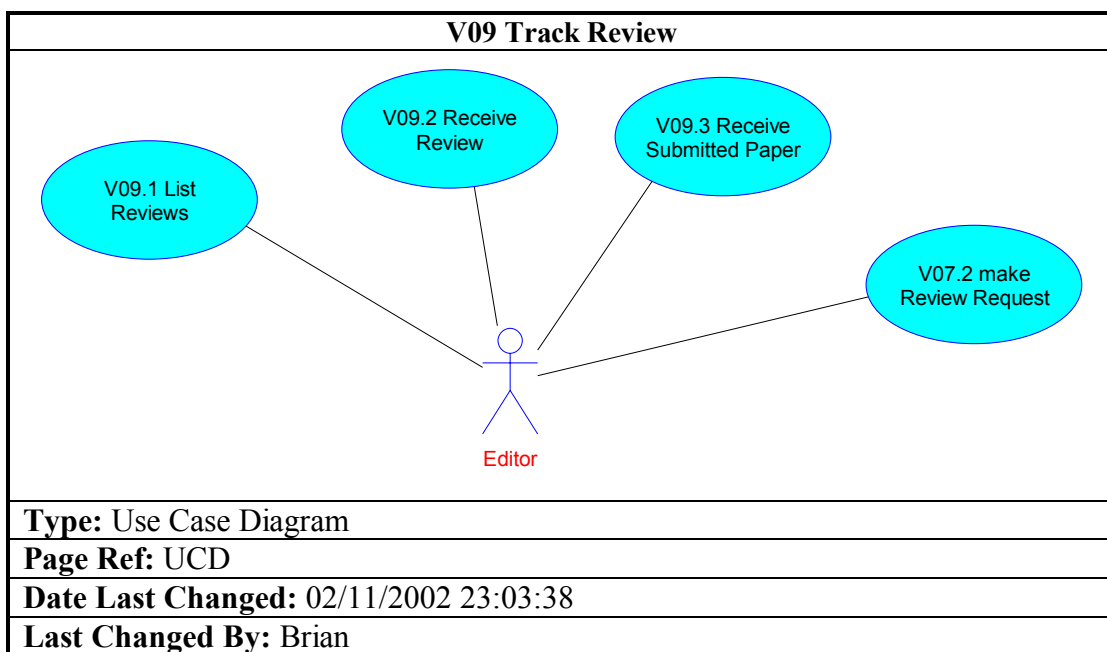


Figure 92: Review Management: V09 Track Review (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Editor	

Objects of Type 'Use Case'

Name	Page
V09.3 Receive Submitted Paper	
V09.1 List Reviews	

Name	Page
V07.2 make Review Request	
V09.2 Receive Review	

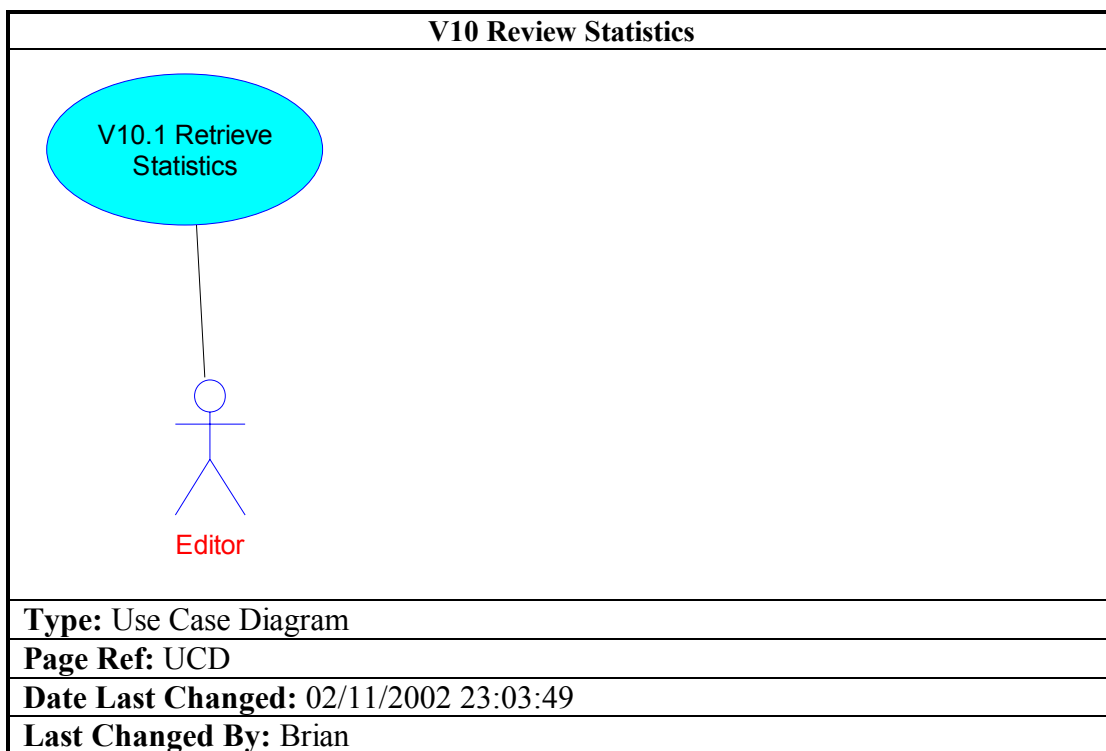


Figure 93: Review Management: V10 Review Statistics (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Editor	

Objects of Type 'Use Case'

Name	Page
V10.1 Retrieve Statistics	

V11 Manage Reviewers
Type: Use Case Diagram
Page Ref: UCD
Date Last Changed: 02/11/2002 23:03:59
Last Changed By: Brian

Figure 94: Review Management:V11 Manage Reviewers (Use Case Diagram)

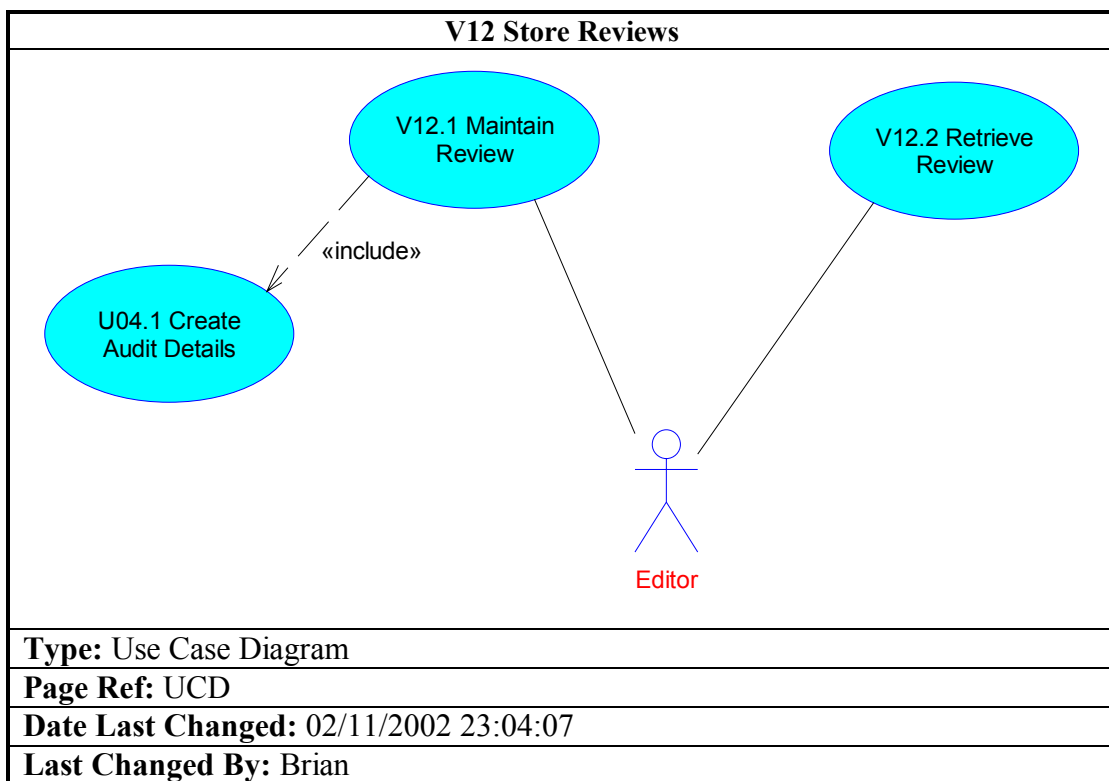


Figure 95: Review Management:V12 Store Reviews (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Editor	

Objects of Type 'Use Case'

Name	Page
V12.1 Maintain Review	

Name	Page
V12.2 Retrieve Review	
U04.1 Create Audit Details	

V13 Profile Reviewers	
Type: Use Case Diagram	
Page Ref: UCD	
Date Last Changed: 02/11/2002 23:04:18	
Last Changed By: Brian	

Figure 96: Review Management:V13 Profile Reviewers (Use Case Diagram)

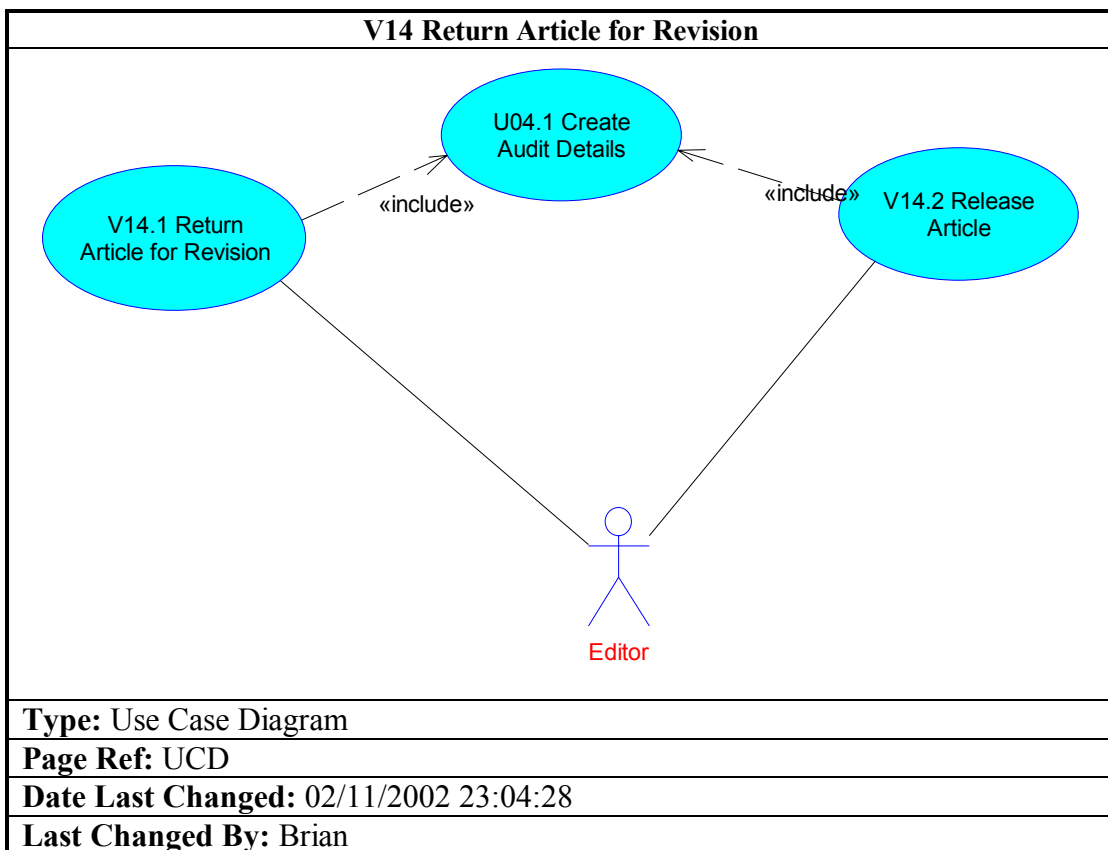


Figure 97: Review Management:V14 Return Article for Revision (Use Case Diagram)

Objects of Type 'Actor'

Name	Page
Editor	

Objects of Type 'Use Case'

Name	Page
U04.1 Create Audit Details	
V14.2 Release Article	
V14.1 Return Article for Revision	