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DUE DILIGENCE STRATEGY WITH CONTEXT MAPS

XU GUO ZHU

A MAJOR REPORT

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Abstract

Due Diligence Strategy with Context Maps

Xu Guo Zhu

This report introduces the methodology of knowledge representation by using *Context Maps*. In particular, the *Due Diligence Strategy* can be represented with the *Context Maps* based on concepts and relationships. The "Entrepreneur America" and "Canadian International Development Agency (CIDA) Roadmap" are different species of the *Due Diligence* processes. The application of modeling these processes by *Context Maps* was demonstrated in the report. In addition, the "Rational Unified Process (RUP) Management" is a set of software engineering processes that provide engineers with guidance to streamline their team's development activities. Applying the "RUP Management" schemata to *Contexts Maps* of *Due Diligence Strategy* was also described in this report. The main purpose of this work is to analyze the advantages of modeling the *Due Diligence* processes by using *Contexts Maps*. The final objective is to develop *Context Maps* methodology for representation the knowledge based information.

Acknowledgements

I would like to express my special gratitude to all the people who gave me the great help during this major report.

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Contents

List of Figures

Chapter 1

1. Introduction

1.1 Background

This report introduces the methodology of knowledge representation by using *Context Maps*. Chapter 1 introduces the objective of study and the procedure of report.

Due Diligence is one of the procedures we use to study, investigate and evaluate the business opportunities. Chapter 2 describes the mechanism of *Due Diligence Strategy* and UML notation of *Due Diligence* processes.

In particular, the *Due Diligence Strategy* can be represented by *Context Maps* based on concepts and relationships. Chapter 3 introduces the inception, paradigm, technology, syntax and tools of *Context Maps*.

The "Rational Unified Process (RUP) Management" schemata can be applied to *Due Diligence Strategy*. Chapter 4 depicts the "RUP Management" schemata, and illustrates how to apply this schema to *Due Diligence Strategy*.

The "Entrepreneur America" is an application of the *Due Diligence* processes. Chapter 5 describes the modeling structure of "Entrepreneur America", and illustrates how to represent this process by *Context Maps*.

In addition, the "CIDA (Canadian International Development Agency) Roadmap" is another application of the *Due Diligence* processes. Chapter 6 explains the paradigm of "CIDA Roadmap" and analyzes the advantages of representation this process by using "RUP Management" schemata in *Context Maps*.

The objective of this report is to analyze the advantages of representation the *Due Diligence* processes by *Contexts Maps*. Chapter 7 provides an evaluative conclusions and recommendations for the future works.

1.2 Objective of Study

This report is to introduce the methodology of *Context Maps* to represent *Due Diligence Strategy*. Based on this technology, *Due Diligence Strategy* can be represented based on concepts and relationships in the Microsoft Excel spreadsheet, and converted into one *Context Map* eventually.

The main purpose of research work is to analyze the advantages of modeling *Due Diligence* processes by using *Contexts Maps*. The final objective is to develop *Context Maps* methodology for representation the knowledge based information.

1.3 Procedure of Report

This research work was supervised by Professor Wojciech M. Jaworski. It was started from September 2001. The procedure of this report is progressed in the following ways:

1) Analyze the requirements of this major report.

2) Do research on *Context Maps* notations, and study to convert the associative model into a spreadsheet with this notation.

3) Get familiar with *Due Diligence Strategy*, especially in understanding the basic concepts of this process for knowledge representation.

4) Study "Rational Unified Process (RUP) Management" schemata, and how to apply this schema to *Due Diligence Strategy*.

5) Practice converting a special application of "Entrepreneur America", which applying *Due Diligence Strategy* for entrepreneurs, into the *Context Maps*.

6) Study "Canadian International Development Agency (CIDA) Roadmap", and represent these diagrams by using *Context Maps*.

7) Apply the "RUP Management" schemata to "CIDA Roadmap" applications, and compare the different structures of the *Context Maps* before and after using this schemata.

8) Make a conclusion for this research work and provide recommendations for future works.

Chapter 2

2. Due Diligence Strategy

2.1 Due Diligence Mechanism

Due Diligence is one of the procedures we use to study, investigate and evaluate business opportunities. *Due Diligence* is used to describe a process of acquiring objective and reliable information on a person or company prior to a specific event.

Due Diligence is a process that critically reviews and analyzes the financial management and operational conditions of a company, agency or project. *Due Diligence* processes are usually focused on the financial and business aspects of a company or project and is most often applied in the evaluation of a potential investment, merger or acquisition. Moreover, *Due Diligence* provides an independent, third party technology assessment of the underlying science and technology associated with new and emerging enterprises and projects.

The types of *Due Diligence* processes include:

1) Basic Personnel (verifications, refreshing personnel files, credentials, etc.)
2) Advanced Personnel (executive backgrounds, promotions, etc.)
3) Corporate Principal (conflict of interest)
4) Vendor

5) Merger and Acquisition

6) Strategic Partners

7) New Customer Acquisition

The benefits of *Due Diligence* include:

1) Informed decision making

2) Reduced risk and avoidance of hidden pitfalls

3) More accurate valuations

4) Improved negotiating position

5) Saved time and resources

6) Minimized bad investments

7) Focused market opportunities

Moreover, individuals and organizations that benefit from *Due Diligence* include investors, entrepreneurs, corporate investment and funding groups, venture capitalists, investment bankers, corporate merger and acquisition agencies.

The goal of *Due Diligence* is to provide comprehensive, complete and accurate information to the level of detail required by client objectives. *Due Diligence* processes are designed to help the orginazations succeed in business. Most importantly, *Due Diligence* programs have saved clients millions of dollars in potential losses.

2.2 UML Notation of *Due Diligence*

The Unified Modeling Language (UML) is a general purpose visual modeling language that is designed to specify, visualize, construct and document the artifacts of a software system. The UML semantic and notation are simple and powerful. The core concepts can be combined and extended so that object modelers can define large and complex systems across a wide range of domains.

The UML specification consists of two interrelated parts:

1) UML semantic: a metamodel that specifies the abstract syntax and semantic of UML object modeling concepts.
2) UML notation: a graphic notation for the visual representations of the UML semantics.

Here is an example of depiction the partnership investment process by UML semantic and notation.

The partnership investment process involves amounts of *Due Diligence* effort as the best opportunities. In evaluating a partnership investment opportunity, the process is used to seek, identify and invest with the best investment teams, and compose the highest quality individuals operating in each subclass. A partnership opportunity may be rejected at any stage in the process based upon an evaluation of whether it meets the investment goals. An overview of the partnership investment selection process is depicted in the following chart:

Figure 1 The example of *Due Diligence* Process

In this example, the UML semantic and notation are used to describe the structure of the partnership investment process. The following diagram shows the UML notation of this process:

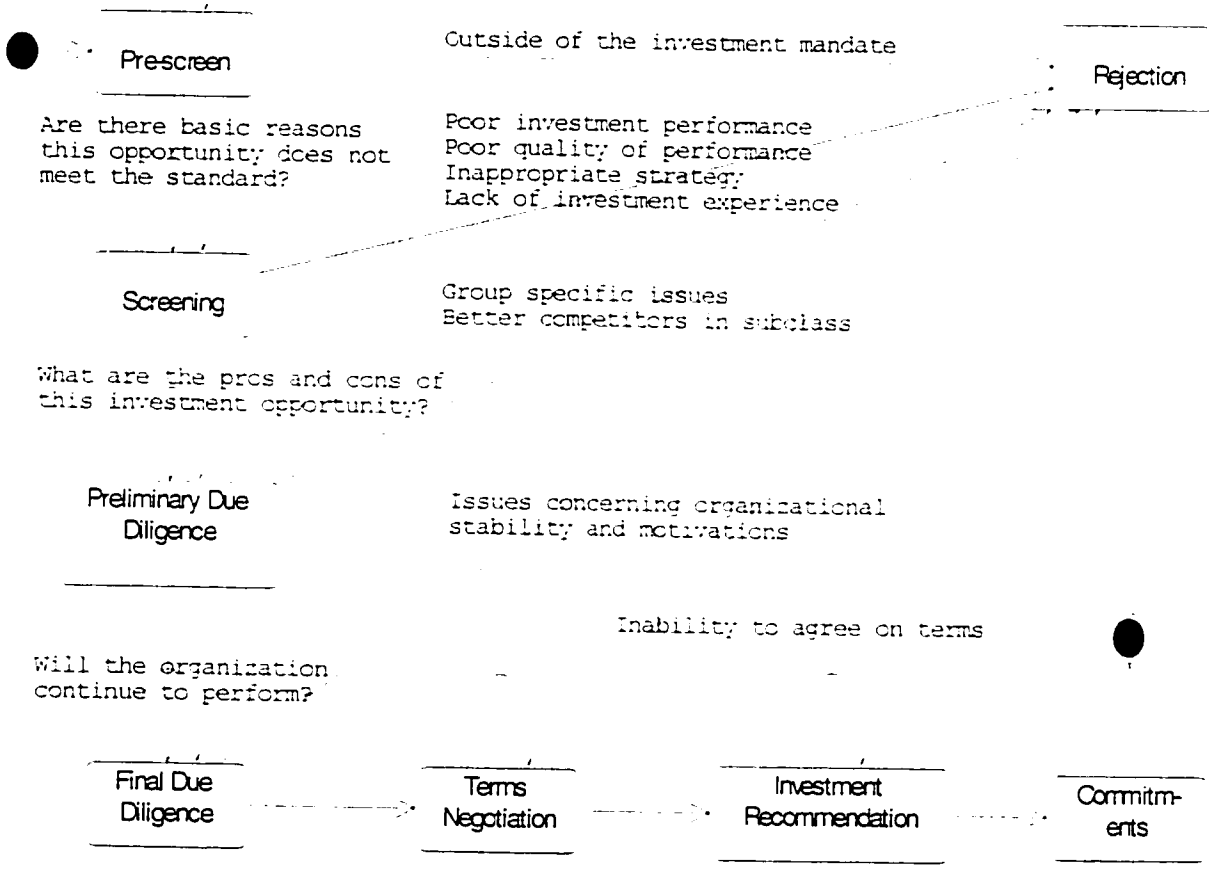

Figure 2 The UML notation diagram of *Due Diligence* Process

In addition, the partnership investment process can be modeled by *Context Maps*. The following diagram illustrates two methods to represent the partnership investment process by using *Context Maps* and UML notation:

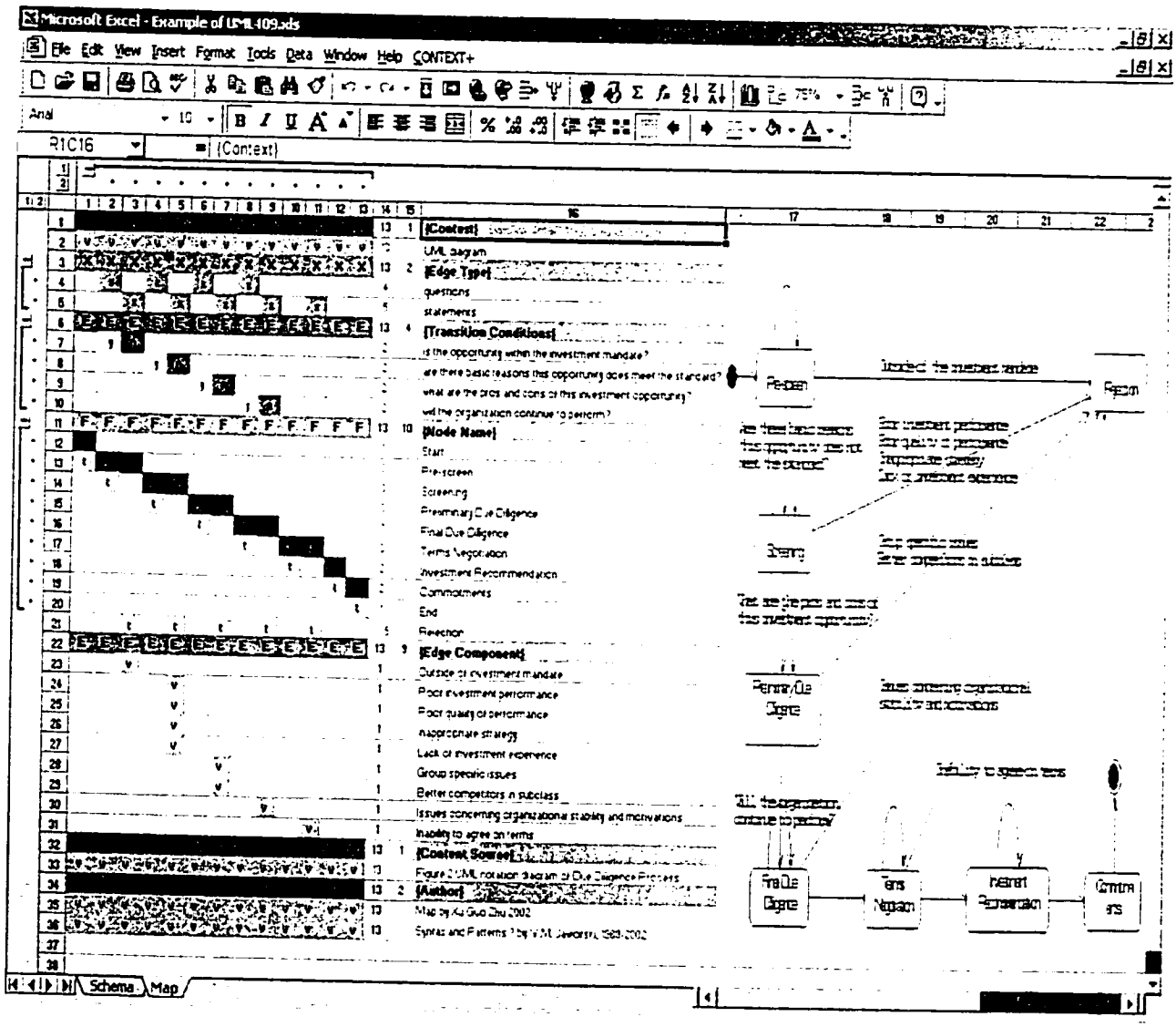

Figure 3 The *Context Maps* of UML notation in *Due Diligence* Process

Chapter 3

3. Context Maps

3.1 *Context Maps* Inception

There are many technologies for representing information system and software engineering. For example, Rational Rose is a tool for generation UML, which can be used to present information systems by graphical notations.

It is a challenge to develop a methodology that is simple and easy to implement for information representation. *Context Maps* is such a method for representing architectures, structures, and reusable templates of information systems. *Context Maps* notation allows efficient recovery and modeling of generic schemata for processes, objects and views in these systems.

Context Maps were first introduced by Wojciech M. Jaworski. The technology was initially developed as a way of recovering and refining knowledge from legacy system. During the late 1970s and early 1980s, based on conceptual graphs introduced by J. F. Sowa, it was named as Array Based Language. In the late 1980s, it was renamed as ABL/W4. W4 represents the meaning of what, when, where and which. In the early

1990s, by considering existing notations and methodologies. Professor Jaworski named this technology as *Context Maps*. In the late 1990s until now, *Context Maps* can be presented as joined maps.

By using the popular concept of a spreadsheet, it is possible for us to represent *Due Diligence* process by *Context Maps*. After that, it is feasible to communicate the *Due Diligence* information with users.

3.2 *Context Maps* Technology

The website "www.gen-strategies.com", which was built by Professor Wojciech M. Jaworski, introduces the technology of *Context Maps*. Context can be defined by an aggregation of context tuples. Context tuple is a generic association of set members cast in roles. In the extended spreadsheet a column of roles and the related set members define context tuples. From the graphical view, context tuple is represented by a compound edge and the connected compound nodes. A directed edge object consists of tail object, middle object and head object. While context tuples represent system behaviors, processes, tasks, procedures and programs, the aggregated context tuples will form *Context Maps*.

Context Maps introduce the concept of creating style sheets to control knowledge based information access and navigation. It is a notation and method for representing system architectures, structures, processes and reusable templates. *Context Maps* are a collection of different information connected together in a logical way.

In a technical sense, *Context Maps* describe the information set by formally declaring topics, and by linking the relevant parts of the information set to the appropriate topics. *Context Maps* represent the relationship between different information nodes in a spreadsheet by vertical columns. By using the logical query of spreadsheet structure, it is convenient to get the specific information that you expect to search from the map.

3.3 *Context Map* Syntax and Process

The syntax of *Context Maps* is based on the Relationship-Oriented paradigm with related sets and set members. In *Context Maps*, the relationships are represented by columns in vertical level. The knowledge tuple is the fundamental structure defined by the concepts and instances related by roles. The relevant mechanism is implemented by allocating roles to sets in schemata and their instance to set members in the map.

Compared to diagrams, maps are very compact with offering a rich context within limited space of a computer screen. *Context Maps* are created or edited within an organized electronic spreadsheet, which assures efficient manipulation of relationships (columns) and heavy reuse of components (rows).

Here is an example to explain how to represent the state machine of "Inception" phase in Unified Process to *Context Maps*. In this phase, each stage can be transferred to its subsequent stage after achieving all the tasks involved in this stage.

Figure 4 demonstrates the workflow of "Inception" phase, and figure 5 illustrates the *Context Maps* of this workflow:

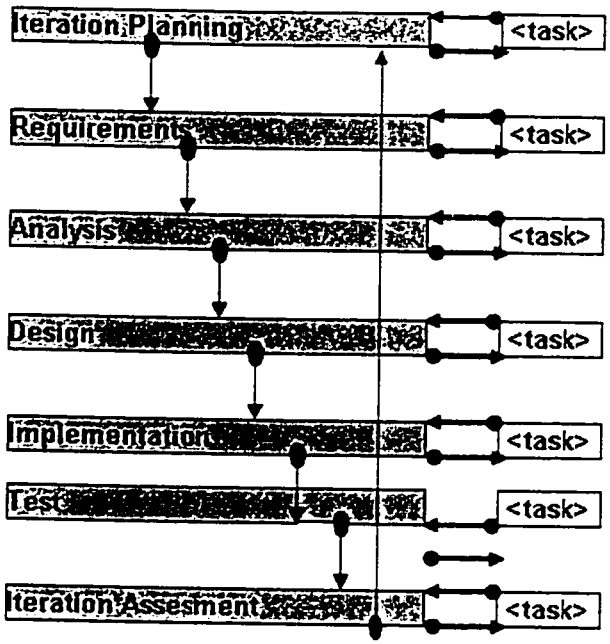

Figure 4 The diagram of workflow in Inception phase of Unified Process

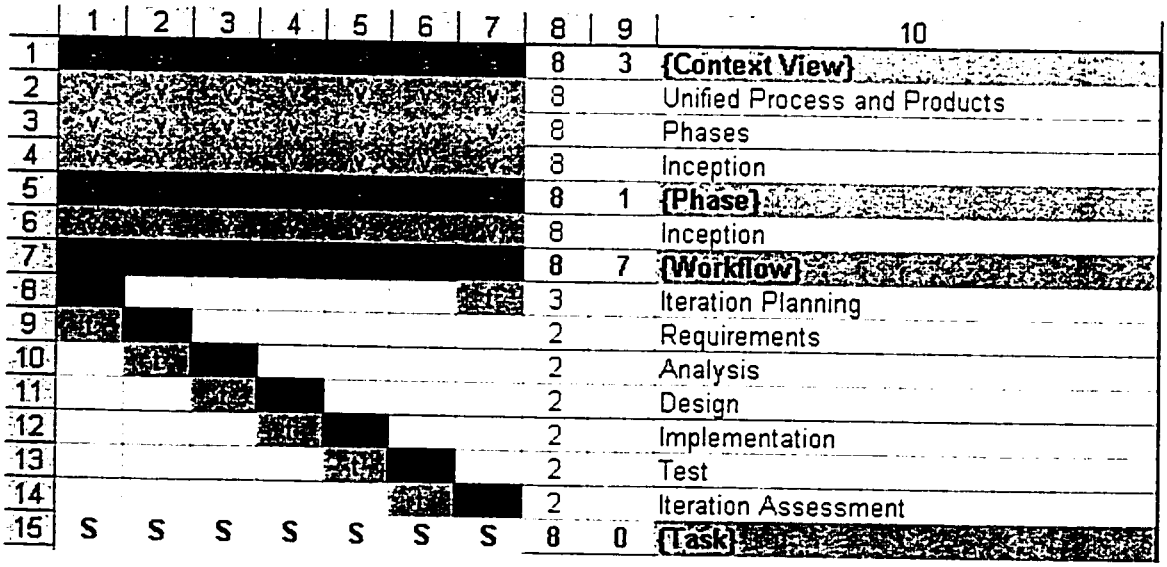

Figure 5 The *Context Maps* of workflow in Inception phase of Unified Process

Compared figure4 with figure5, nodes can be represented as "Sets" or "Components", and arrows can be represented as "Set Symbols" or "Component Symbols". The following describes the contents in *Context Maps*:

1) Sets: the bold letters in {<set name>}of column10, such as {Phase}, {Workflow}, and {Task}.
2) Components: the members in {<set name>} of column10, such as "Iteration Planning", "Requirements" and "Analysis".
3) Context Tuples: the contents in the columns from 1 to 7.
4) Set Symbols: the upper case letters between column1 and column7, such as "A", "L", and "S".
5) Component Symbols: the lower case letters or digitals between column1 and column7, such as "f", "t", and "1".
6) Number of Component Symbols: the column8 counts the amount of Components Symbols.
7) Number of Components: the column9 counts the amount of Components.

In general, the schemata provide the information about *Context Maps* structure and size. The schemata of *Context Maps* can be obtained by hiding set members and irrelevant columns.

3.4 *Context Maps* Notation

Context Maps notation can be used into many fields such as:

1) Information system architecture
2) Automation of system design
3) Evolving information systems
4) Software evaluation and renewal
5) Systems workstations
6) Modeling of web sites and knowledge hubs
7) Recovery and reuse of system patterns

Context Maps notations are explained as follows:

1) The symbols of sets:

   A – Template Aggregation

   T – Template

   Y – Dominant

   Z – Descriptive

   K – Identifier

   O – Identity

   H – Hierarchy

   I – Generalization – "parent" or "heir"

   P – Aggregation – "whole" or "part"

U – Uses or used

D – Dependence

S – Sequence – position in a sequence

F – Flow "from" or "to"

L – Flow "from", "to" and "loop"

X – Unique Qualifier

M – Association

G – Guard or Goal

E – Event

V – Value

? – User defined

2) The symbols of set members:

l ... * - identifier or value

o - column marker

h - tree root

l ... * - branch

f - from:

t - to:

b - both

m - many or middle:

d - destination:

s - source:

l - loop

a – assertion

e - exception

x - unique row marker

v - related

c – composite

t - true

f - false

o - otherwise

t - implied true

f – implied false

e – enabled

d – disabled

u - update

? – User defined

3.5 *Context Maps* Application Environment

The application environment of *Context Maps* is Microsoft Excel. Excel is a spreadsheet that allows you to organize data, complete calculations, make decisions, graph data, and develop professional reports.

The three major parts of Excel are:

1) Worksheet allows better calculating, manipulating, and analyzing data such as numbers and text.

2) Chart pictorially represents the data. Excel can draw a variety of two-dimensional and three-dimensional charts.

3) Database is used for data management. For example, once you enter the data, you can search for specific data, and select data that meet the criteria.

3.6 "CONTEXT+" Tools of *Context Maps*

The "CONTEXT+" tools of *Context Maps* are developed to retrieve the useful information and generate the corresponding maps.

The "CONTEXT+" tool includes the following four functions:

1) Show Schema

2) Query

3) Compute Cardinality

4) Apply Color

"Query" is the most useful function in the "CONTEXT+" tool. It gives users a convenient and flexible method to manipulate and control *Context Maps*.

In order to use this function, the specific components in *Context Maps* should be selected. After choosing the "OR", "XOR", "AND", or "NOT" operation, and clicking the "OK" button in the interface, the relevant components and relationships can be picked out to generate the result *Context Maps*. The following diagram shows the interface of the "Query" function in "CONTEXT+" tools:

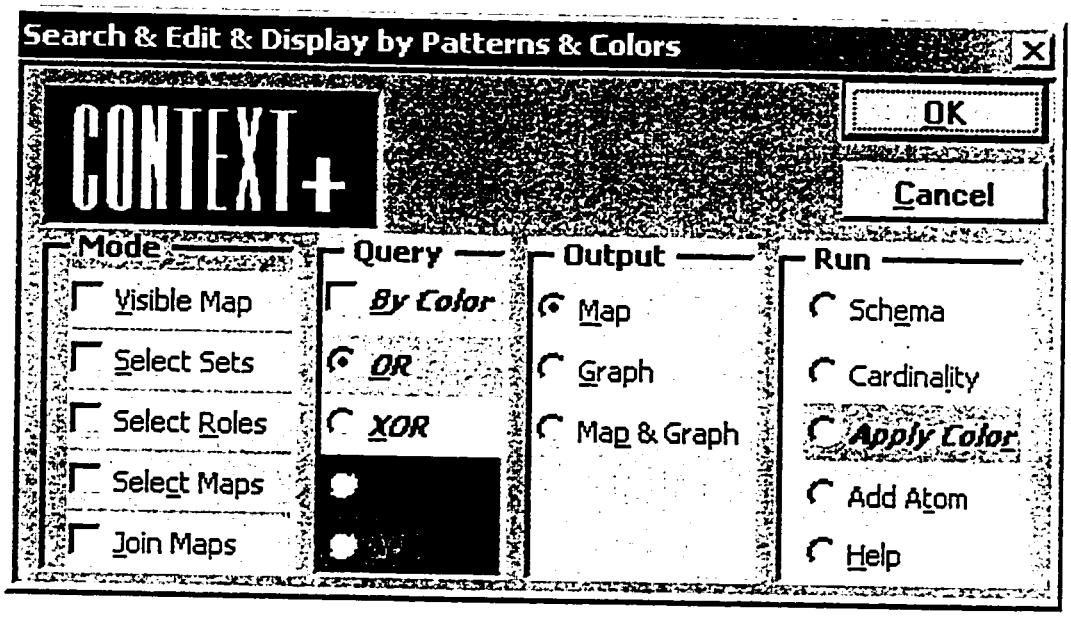

Figure 6 The schemata view of map with pattern

Chapter 4

4. Context Maps with RUP Management

4.1 RUP Introduction

The Rational Unified Process (RUP) is a flexible, configurable process framework. It is a set of software engineering processes that provide engineers with guidance to streamline their team's development activities.

RUP provides a disciplined approach to assigning tasks and responsibilities within a development organization. RUP delivers software development from industry leaders, reduces risk and increases predictability of software development. As an industry-wide process platform, RUP enables users to easily choose the set of process components that are right for the specific project needs. Software engineers will achieve more predictable results by unifying their team with common processes that improve communication and create a common understanding of all tasks, responsibilities, and artifacts. RUP can improve the team communication, optimize the usage of Unified Modeling Language (UML), deploy tools to automate the full software lifecycle, and accelerate the project with clear guidance, templates and useful examples.

The goal of RUP is to ensure the production of high-quality software that meets the needs of its end users within a predictable schedule and budget. It gives all team members the guidelines that they needed to effectively plan and execute iterative development.

Through RUP, people could better understand how to structure and organize the projects. It is also helpful in giving a process and proven best practices for doing the usability design and testing.

The following figure illustrates the overall architecture of the Rational Unified Process (RUP):

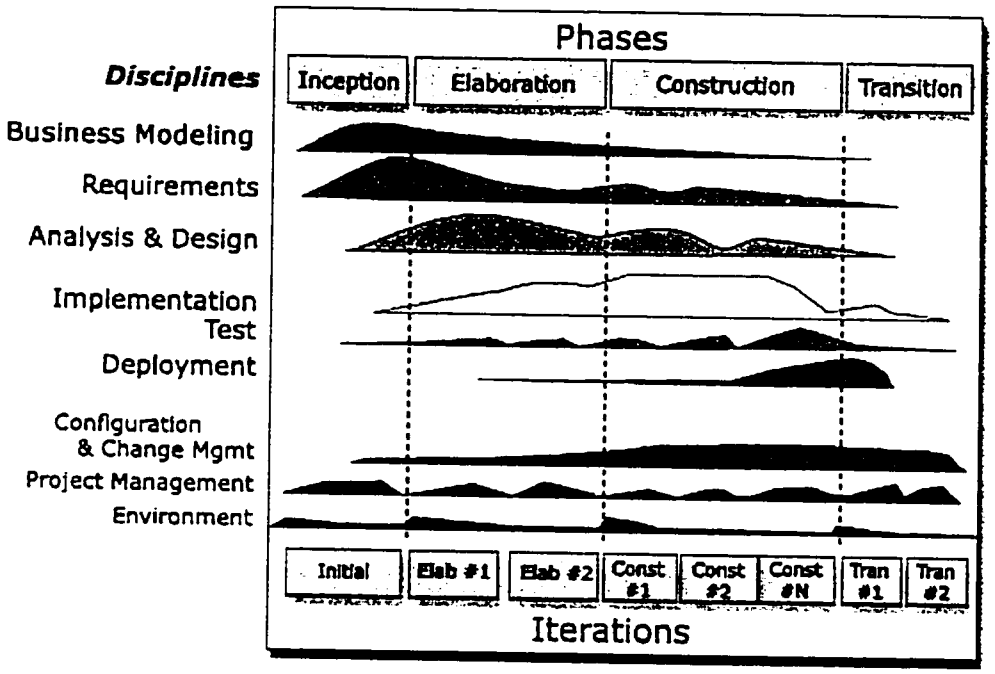

Figure 7 The overview of Rational Unified Process

The RUP is divided into two dimensions:

1) Horizontal axis: represents time and shows the lifecycle aspects of the process.
2) Vertical axis: represents core process workflows, which group activities logically by nature.

The first dimension describes the dynamic aspect of the process as it unfolds, and it is expressed in terms of phases, iterations, and milestones. The second dimension depicts the static aspect of the process including how it is described in terms of process components, disciplines, activities, workflows, artifacts, and roles.

The following diagram shows how you can apply best practices of software engineering, and how you can use tools to automate your software engineering process:

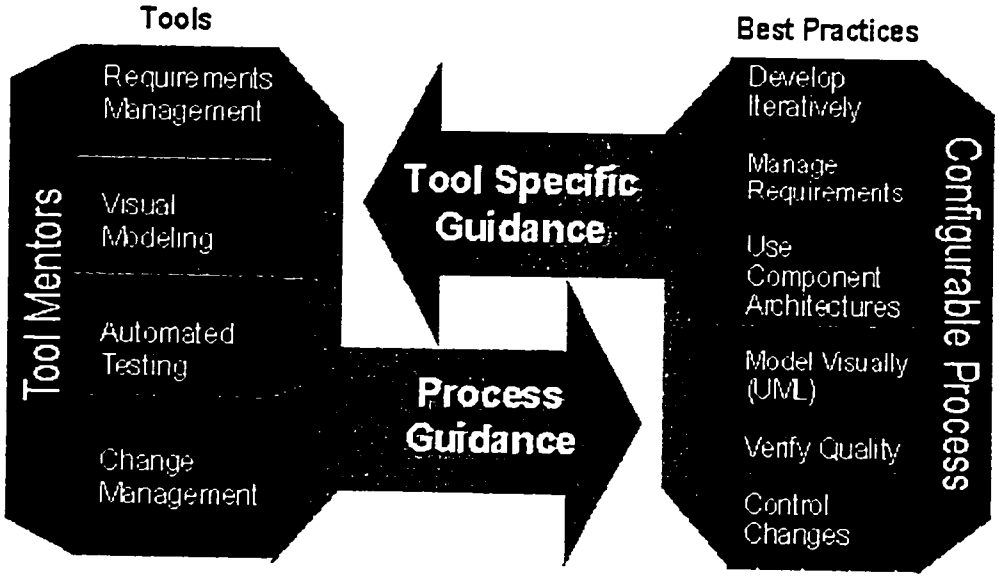

Figure 8 The best practices of Rational Unified Process

4.2 RUP Management Schemata

The top level of "RUP Management" schemata is called {Context Views}, which includes the following components:

1) Phases

2) Business Modeling

3) Requirements

4) Analysis and Design

5) Implementation

6) Test

7) Deployment

8) Configuration & Change Management

9) Project Management

10) Environment

4.2.1 Phases:

From a management perspective, the software lifecycle of RUP is decomposed over time into four sequential phases, each concluded by a major milestone. Each phase is essentially a span of time between two major milestones. At the end of each phase, an assessment is performed to determine whether the objectives of the phase have been met. A satisfactory assessment allows the project to move to the next phase.

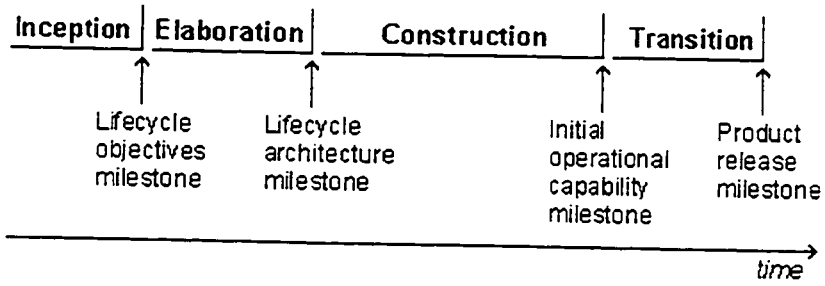

Figure 9 The phases and milestones of a project

4.2.2 Business Modeling:

The purposes of business modeling are to understand the structure and the dynamics of the organization in which a system is to be deployed the target organization. and find out current problems in the target organization and identify improvement potentials. The intentions are also to ensure the customers. end users. and developers have a common understanding of the target organization. and derive the system requirements needed to support the target organization.

To achieve these goals. the business modeling workflow describes how to develop a vision of the new target organization. and based on this vision define the processes. roles. and responsibilities of that organization in a business use-case model and a business object model.

4.2.3 Requirements

A requirement is defined as a condition or a capability to which the system must conform. There are many different kinds of requirements. One way of categorizing them is described as the FURPS model. By using the acronym FURPS model. the major categories of requirements can be divided into:

1) Functional requirements

2) Usability requirements

3) Reliability requirements

4) Performance requirements

5) Supportability requirements

4.2.4 Analysis & Design

An analysis mechanism represents a pattern that constitutes a common solution to a common problem. They may show patterns of structure and patterns of behavior. They are used during analysis to reduce the complexity of analysis, and to improve its consistency by providing designers with a shorthand representation for complex behavior.

A design mechanism is a refinement of a corresponding analysis mechanism. As with analysis mechanisms, a design mechanism may instantiate one or more patterns, in this case architectural or design patterns.

4.2.5 Implementation:

The purposes of implementation are to define the organization of the code in terms of implementation subsystems organized in layers, and implement classes and objects in terms of components (source files, binaries, executables, and others). The goals also include how to test the developed components as units, and integrate the results produced by individual implementers or teams into an executable system. The implementation workflow limits its scope to how individual classes are to be unit tested.

4.2.6 Test:

The purposes of testing are to verify the interaction between objects, certify the proper integration of all components of the software, ensure all requirements have been correctly implemented, and identify defects are addressed prior to the deployment of the software.

In many organizations, software testing accounts for 30 to 50 percent of software development costs. However, most people believe that software is not well tested before it is delivered. This contradiction is rooted in two clear facts. First, testing software is enormously difficult. The different ways a given program can behave are unquantifiable. Second, testing is typically done without a clear methodology and without the required automation or tool support. While the complexity of software makes complete testing an impossible goal, a well-conceived methodology and use of state-of-the-art tools, can greatly improve the productivity and effectiveness of the software testing.

4.2.7 Deployment:

The deployment workflow describes the activities associated with ensuring that the software product is available for its end users. It describes three modes of product deployment: the custom install, the "shrink wrap" product offering, and the access to software over the Internet. In each instance, there is an emphasis on testing the product at the development site, followed by beta testing before the product is finally released to the customer.

4.2.7 Configuration and Change Management:

Configuration and Change Request Management (CM) involves identifying configuration items, restricting changes to those items, auditing changes made to those items, and defining and managing configurations of those items. The methods, processes, and tools used to provide change and configuration management for an organization can be considered as the organization's CM System.

An organization's Configuration and Change Request Management System holds key information about its product development, promotion, deployment and maintenance processes, and retains the asset base of potentially reusable artifacts resulting from the execution of these processes. This system is an essential and integral part of the overall development processes.

4.2.8 Project Management:

Software project management is the art of balancing objectives, managing risks, and overcoming constraints to successfully deliver a product, which meets the requirements of both customers and the users. This workflow is mainly focused on the important aspects of an iterative development process: risk management. It plans an iterative project through the lifecycle, and monitors progress of an iterative project.

4.2.9 Environment:

The environment workflow is focused on the activities necessary to configure the process for a project. It describes the activities required to develop the guidelines in support of a

project. The purpose of the environment activities is to provide the software development organization with the software development environment, both processes and tools, which will support the development team.

The following diagram shows the schemata of "RUP Management" by using *Context Maps*:

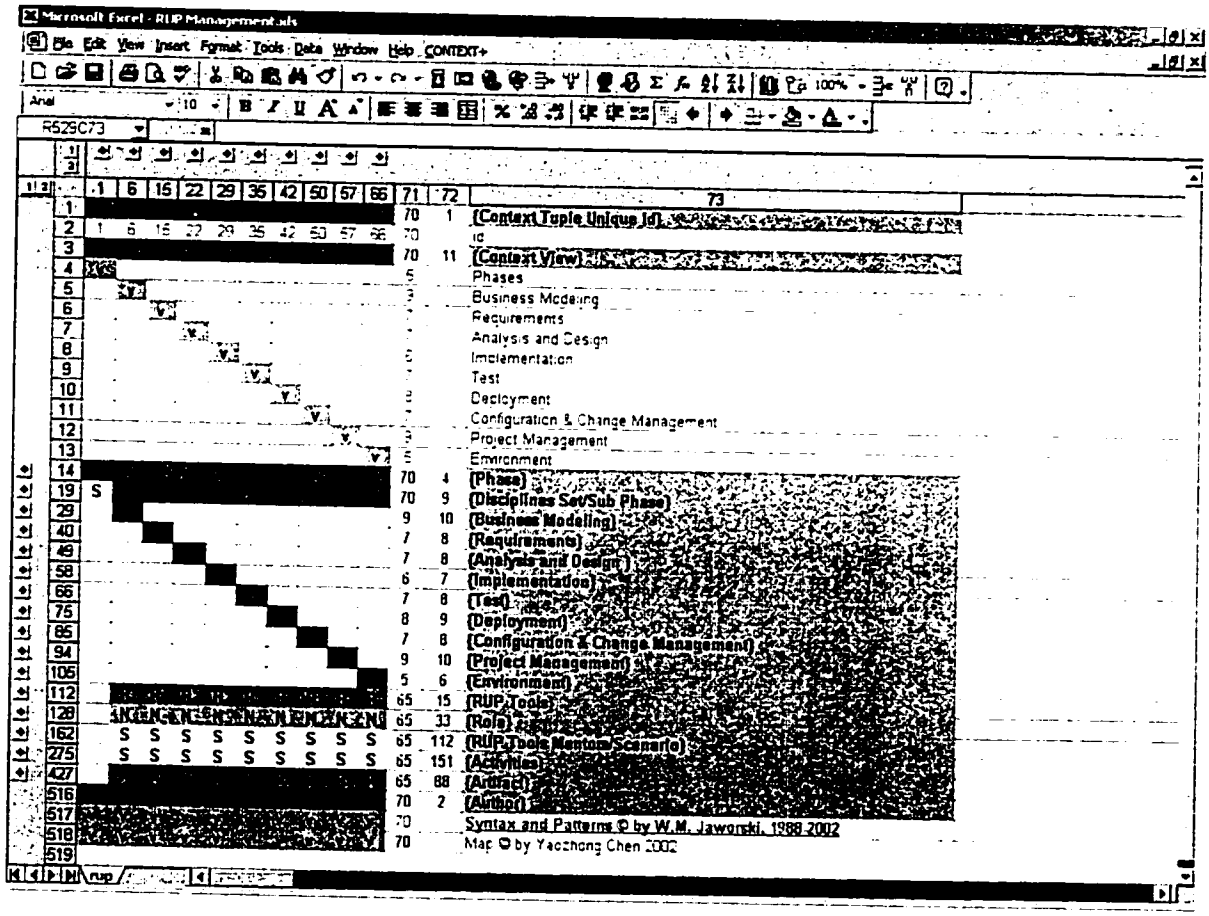

Figure 10 The schemata of "RUP Management" by *Context Maps*

4.3 Applying RUP Management Schemata to Due Diligence Strategy

The original information, such as diagrams, tables, source codes and texts, can be rewritten into *Context Maps* by abstracting the generic schemata. The schemata of *Due Diligence Strategy* can be developed analytically from conventional knowledge. The following diagram illustrates the schemata of *Due Diligence Strategy*:

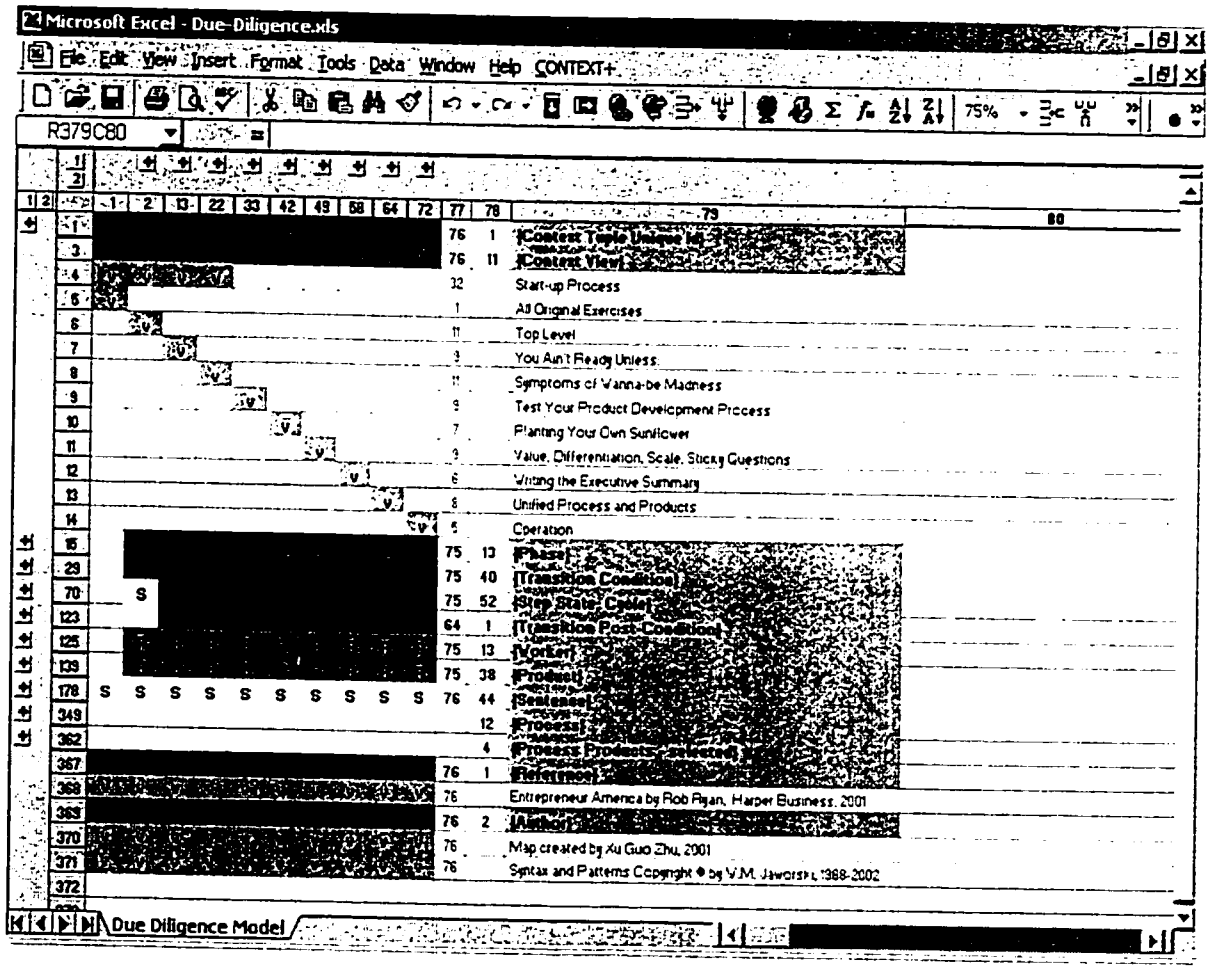

Figure 11 The schemata *Due Diligence Strategy* by *Context Maps*

By using the schemata of Rational Unified Process (RUP), the *Due Diligence Strategy* can be normalized into the standard schemata. The schemata use the standard UML metamodel, such as {roles}, {artifact} and {scenario} to represent the *Due Diligence* processes in business field. In this way, the processes are conformed to the standard formalization.

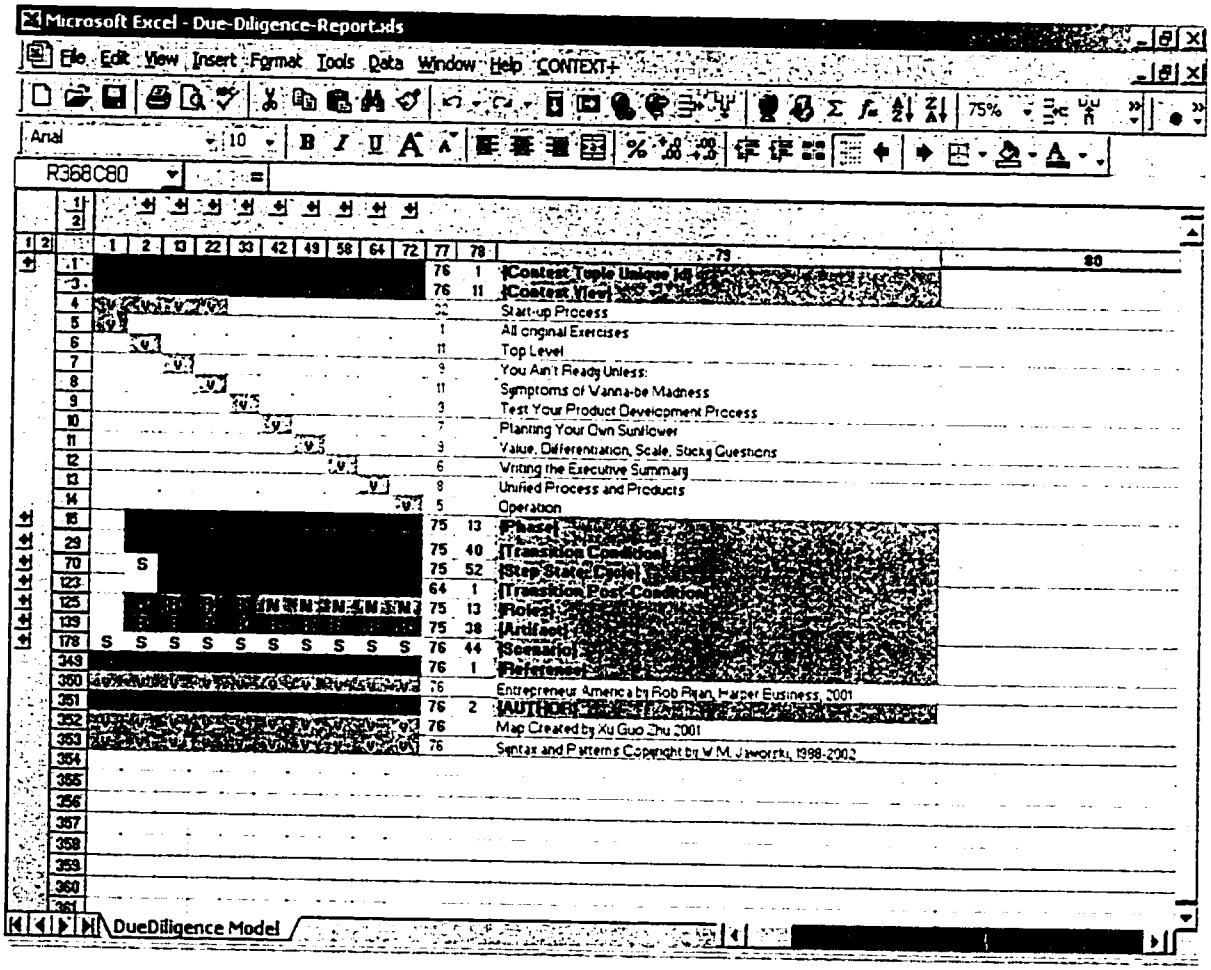

Figure 12 The schemata of *Due Diligence Strategy* by applying RUP

Chapter 5

5. Representation "Entrepreneur America" by Context Maps

5.1 "Entrepreneur America" Introduction

"Entrepreneur America" is described one of the *Due Diligence* processes for business plans. It is based on many years experience of managing and financing a successful company. It is a carefully process that begins with building the proper team and ends with managing the broad of investors.

There are six sequential steps in the "Entrepreneur America" process. The first step is to size up the "Entrepreneurial Wannabes", which means to learn about which type of entrepreneur you are and just what state your company is in. The second step is to aim you at the right target, which includes asking what customers really like and need. The third step is to outline one of the most important exercises in "Entrepreneur America", which ensures that the produces and services are positioned in the best possible way. The fourth step is to concentrate on the key series of questions to answer in building a solid business. The fifth step is to give the example of a winning business presentation and executive summary. Then, you can know how to become number one, and stay number one. The last step is to get on with leading and managing the company's growth, which guides how to manage operations, hiring, and the board.

After finishing all the above steps, you will have a solid understanding of how to raise money and build a successful business.

5.2 "Entrepreneur America" Modeling Structure

The modeling structure of "Entrepreneur America" can be designed by abstracting the main procedures from this process. The outline of "Entrepreneur America" is represented as the following eight sets:

1) {Context View}
2) {Phase}
3) {Transition Condition}
4) {Step State: Cycle}
5) {Transition Post-Condition}
6) {Roles}
7) {Artifact}
8) {Scenario}

The top level of "Entrepreneur America" structure is {Context View} set, which consists of the following components:

a. Start-up Process
b. All Original Exercises
c. Top Level
d. You Aren't Ready Unless

e. Symptoms of Wanna-be Madness

f. Test Your Product Development Process

g. Planting Your Own Sunflower

h. Value, Differentiation, Scale and Sticky Questions

i. Writing the Executive Summary

j. Unified Process and Products

k. Operation

According to the above analysis, the schemata of "Entrepreneur America" by *Context Maps* is illustrated as follows:

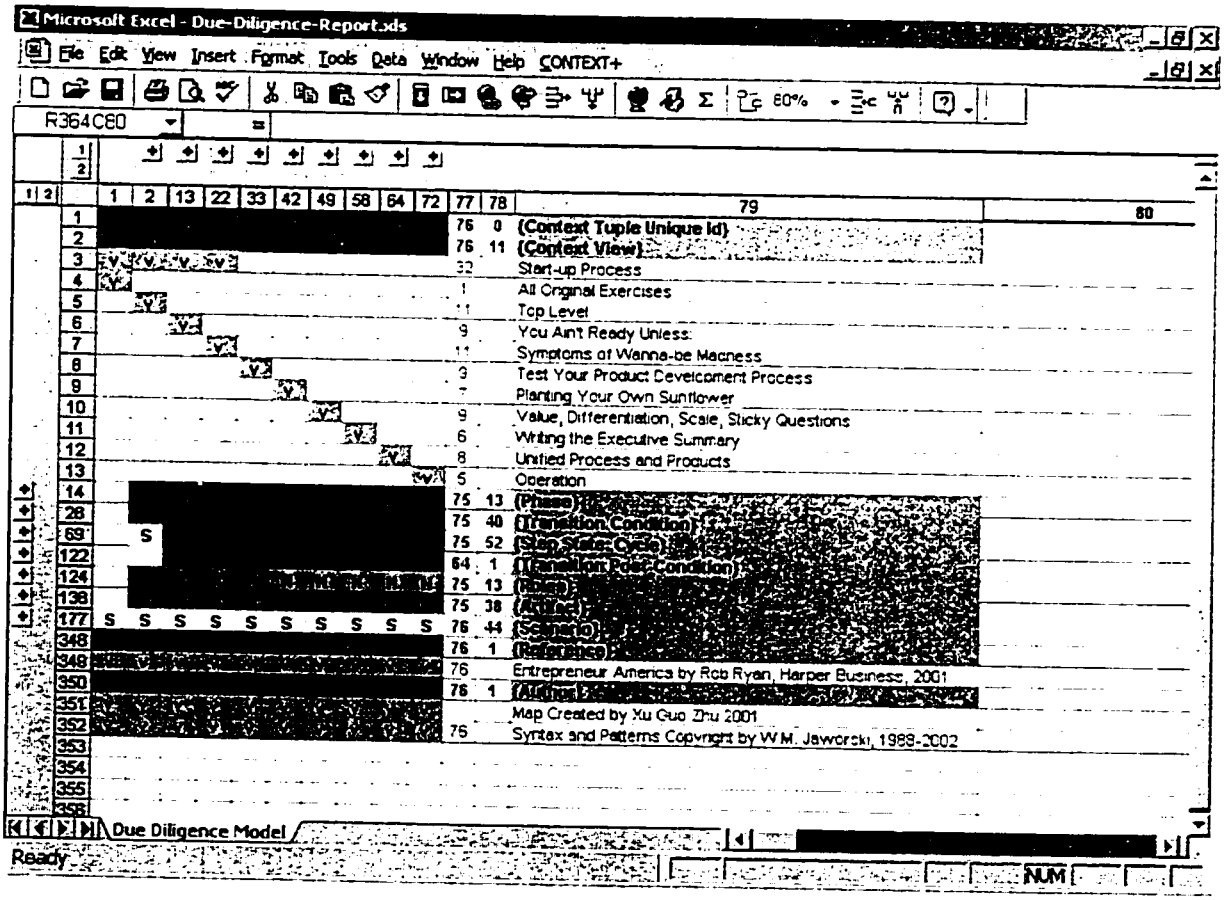

Figure 13 The schemata of "Entrepreneur America" by *Context Maps*

5.3 Representation "Entrepreneur America" by *Context Maps*

After analyzing the contents of "Entrepreneur America" carefully, the relevant information from the book can be extracted, and appended into the *Context Maps* by using the following steps:

1. "Entrepreneur America" is a kind of *Due Diligence* processes that dealing the financing business with entrepreneurs. It is a questionnaire process to interact between the financing experts with entrepreneurs. The outline of this process is extracted from "Entrepreneur America" in logical level.

2. Select the useful information to set up the knowledge base of *Due Diligence* process, which can be used to construct the keywords of the *Context Maps*.

3. Build up the suitable schemata according to the keywords from the above knowledge base. The "Entrepreneur America" process is divided into eight sets: {Context View}, {Phase}, {Transition Condition}, {Step State: Cycle}, {Transition Post-Condition}, {Roles}, {Artifact}, and {Scenario}.

4. Choose the suitable keywords from the knowledge base as the components of *Due Diligence* process, and append these components into the corresponding set of the above schemata. The semantics of all the components in the sets of the schemata is described as follows:

(1) {Context View} is the top-level structure of the "Entrepreneur America" in the financing business field.

(2) {Phase} is the main set in the structure, which is divided into the following components:

a. Start

b. Idea

c. Business Proposition

d. Start-Up Boot Camp

e. First Round Financing

f. Product Development Process

g. Sunflower Model

h. Keys to the Gold Mine

i. "Peeing in the Wells"

j. "Sucking the Air

k. "So You've Got Money"

l. Second Round Financing

m. End

(3) {Transition Condition} describes the conditions under which the transitions can be transferred.

(4) {Step State: Cycle} is decomposed each component in {Phase} set into several sub-steps. It used for description the detailed information in different states of the financing business.

(5) {Transition Post-Condition} indicates the conditions under which the processes should be finished.

(6) {Roles}gathers all kinds of people that work in the corresponding sub-steps.

(7) {Artifact} summarizes the whole products and documentations that produced in the sub-steps of "Entrepreneur America".

(8) {Scenario} lists all the questions that selected from each step of the processes in financing business. Each sub-step includes one or more relevant questions.

5. Represent the relationship between the relevant components. In the *Context Maps*, each column presents the specific relationship of the components.

(1) For example, the relationship between the components in {Phase} set in *Context Maps* of "Entrepreneur America" can be illustrated as the following state machine:

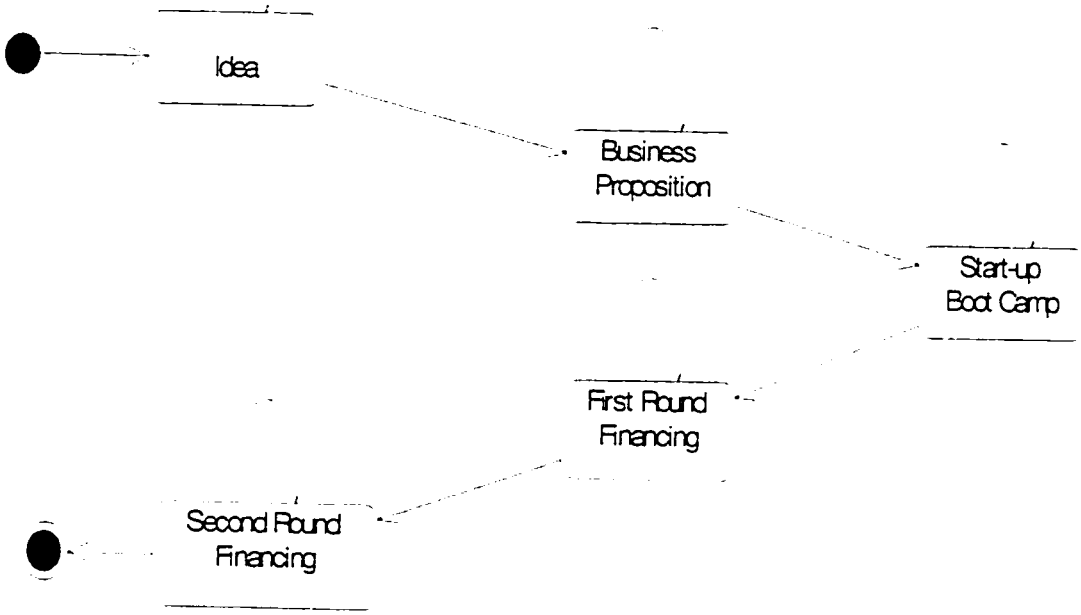

Figure 14 The State Machine to represent components in {Phase} set

According to the above diagram, the sequential columns are created by connecting components in {Phase} set with the characters "f", "t", "l", and "v". The meanings of these characters are as follows:

1) "f" stands for "from"

2) "t" stands for "to"

3) "l" stands for "loop"

4) "v" stands for "related"

The following figure shows the {Phase} set in *Context Maps* of "Entrepreneur America":

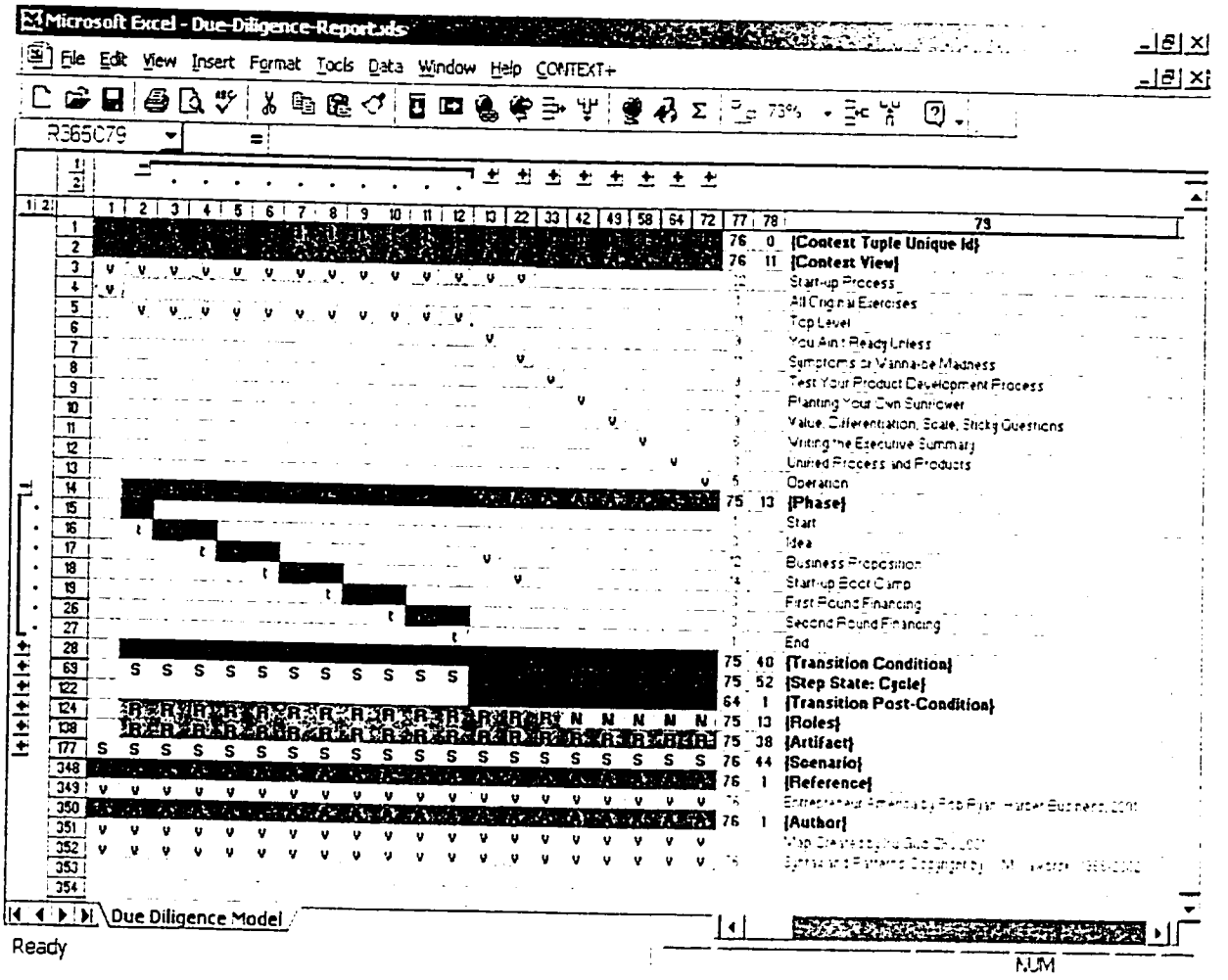

Figure 15 The {Phase} set in *Context Maps* of "Entrepreneur America"

(2) Another example shows the relationships of "Product Development Process" component in {Phase} set.

According to the contents involving "Product Development Process" component, the semantics of the information can be summarized. If the condition of "Draft product model finished?" in {Transition Condition} set is satisfied, the state of "Modify the model" will be transferred into the state of "Build the model" in {Step State: Cycle} set.

During this process, the "VP technology", "VP engineer", and "VP finance" in {Roles} set are involved in, the product of "Draft model" in {Artifacts} set is produced, and the questions number4 and number5 in {Scenario} set are affiliated.

By applying the "Query" function to the component of "Product Development Process" in "Entrepreneur America", the *Context Maps* shows below:

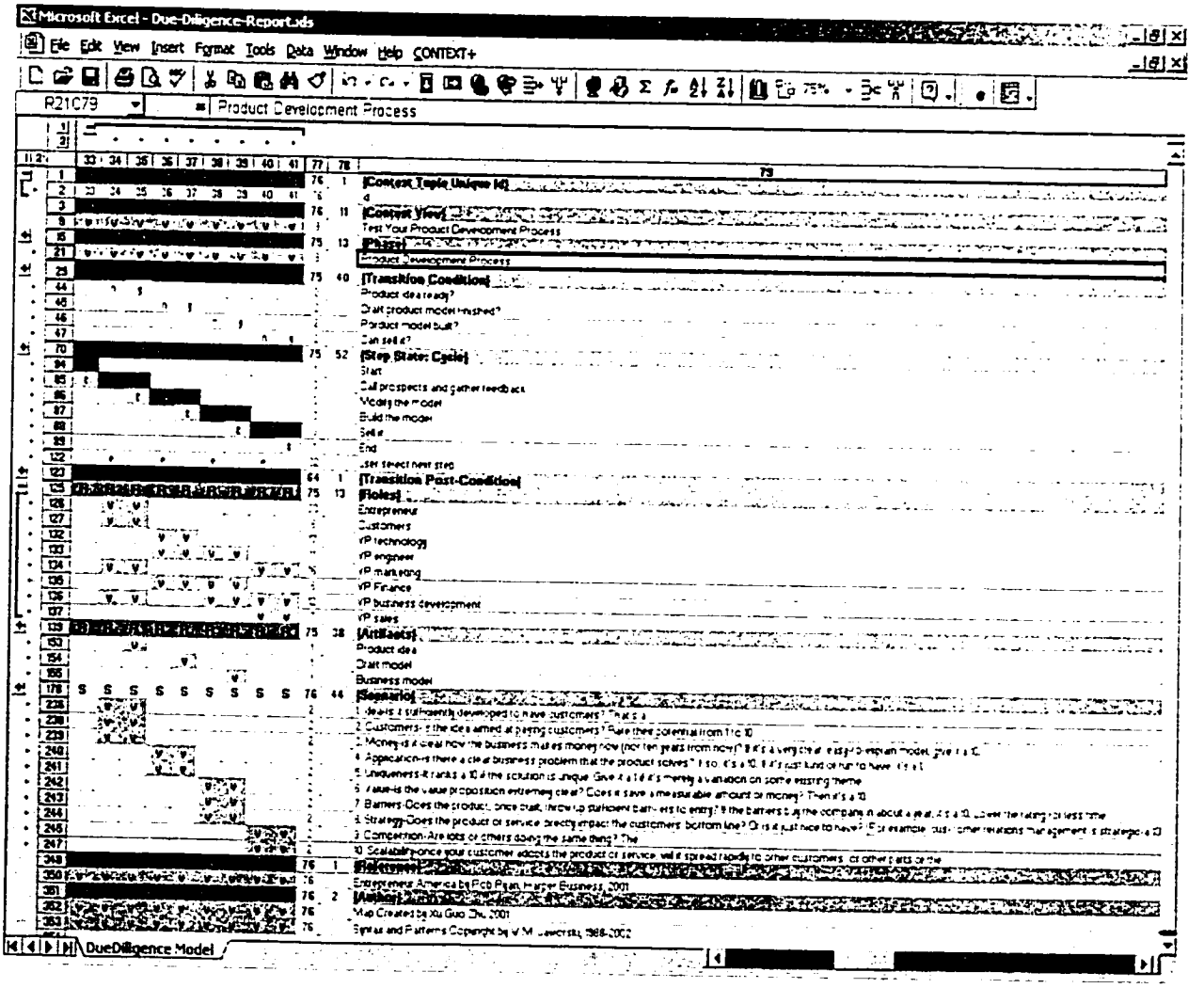

Figure 16 The *Context Maps* by querying "Product Development Process" in "Entrepreneur America"

After converting the "Entrepreneur America" into *Context Maps*, we can get the clear descriptions about this *Due Diligence* process. And we can draw the conclusions of how to negotiate with the financing experts to build up a successful company by using *Due Diligence* processes.

Chapter 6

6. Representation "CIDA Roadmap" by Context Maps

6.1 "CIDA Roadmap" Introduction

Canadian International Development Agency (CIDA) is a kind of process to initial, create and evaluate projects by development organizations. CIDA supports development activities in order to reduce poverty and contribute to a more secure, equitable and prosperous world. CIDA organizations in Canada and around the world provide a wealth of information on international development.

Development is a complex, long-term process that involves all of the world's people, governments and organizations at all levels. The objective of CIDA is to help the developing countries develop the tools to eventually meet their own needs. Working with the partners in public agencies, and international organizations of developing countries, CIDA support foreign aid projects in more than 100 poorest countries of the world.

The activities of CIDA project take place within the context of established development policies, management frameworks and program planning processes. These elements form the broad environment in which projects are identified, appraised, designed, implemented and evaluated to promote consistency in agency practices.

"CIDA Roadmap" is an ongoing consultative process, which designed to assist Canada's associations and government to jointly define both the market segments and the technological innovations. The overview of "CIDA Roadmap" highlights the policy, regulatory and procedural context for the conduct of the Bilateral Aid Program. It summarizes the different methodologies used to develop and implement bilateral aid projects and programs throughout the multi-year project cycle. It provides appropriate references to key policies, strategies, guidelines and issue papers.

6.2 "CIDA Roadmap" Mechanism

"CIDA Roadmap" mechanism refers to the broad programming choices available to managers in the partnership branches. There are two principal programming mechanisms within the bilateral program branches.

The traditional approach within bilateral program branches is referred to the "Bilateral Directed Mechanism". The directed programming is for projects developed primarily by CIDA in consultation with the developing countries. Under this mechanism, CIDA bilateral staffs direct all initial phases of the project with project implementation contracted to executing agencies. Both the for-profit sector and the not-for-profit sector will typically be involved in open competition to execute these projects.

The unsolicited proposal mechanism is referred to the "Bilateral Responsive Mechanism". The responsive programming is for unsolicited proposals from the for-

profit and not-for-profit sectors. And the use of special program and project expenses are directly in support of bilateral programs or projects. Projects financed under this mechanism are funded within normal bilateral countries.

The collections of "CIDA Roadmap" are divided into five sections:

1) CIDA Roadmap Version 5.1
2) Partnership Branch:
    a. International Youth Internship Program (IYIP)
    b. NGO - Project Facility (SNG)
    c. NGO - Volunteer-Sending NGOs
    d. NGO - Program Funded NGOs
    e. ERIM/PSPO Conference Secretariat
    f. ICD - MSOP
    g. ICD - Scholarship Program (CIDA Awards for Canadians)
    h. ICD - Scholarship Program (Francophonie)
    i. ICD - Scholarship Program (Marine)
    j. ICD - ESDP
    k. Contribution Agreements Partnership (ESDP)
    l. Industrial Cooperation Division (INC) Program
    m. INGO Division
    n. ICD - EIP CCCP Program
    o. ICD - EIP Specialized & Other Development Institutions
    p. ICD - EIP UPCD Program

3) Communications:

   a. Development Information Program

4) Central Eastern Europe (CEE)

   a. CIDA Roadmap - CEE Branch

   b. Contribution Agreements

5) Multilateral

   a. Food Aid Center NGO Responsive

   b. Food Aid Center Emergency Response

   c. Food Aid Center Multilateral Food Aid Programming

   d. Food Aid Center Country to Country

   e. MFD Regional Development Banks

   f. MFD Bretton Woods Institutions

   g. MHA Peacebuilding

   h. MHA Humanitarian Assistance Operations

   i. MHA Emergency Response

   j. MUN U.N. & Cmnwlth Organizations Core Inst. Funding

   k. MUN Core U.N. & Cmnwlth Programme Funding

   l. MUN U.N. Responsive programme

   m. MUN Mine Action Programme

The "CIDA Roadmap" can be described by two levels: Project Level and Programme Level. The following diagrams depicts these two levels correspondingly:

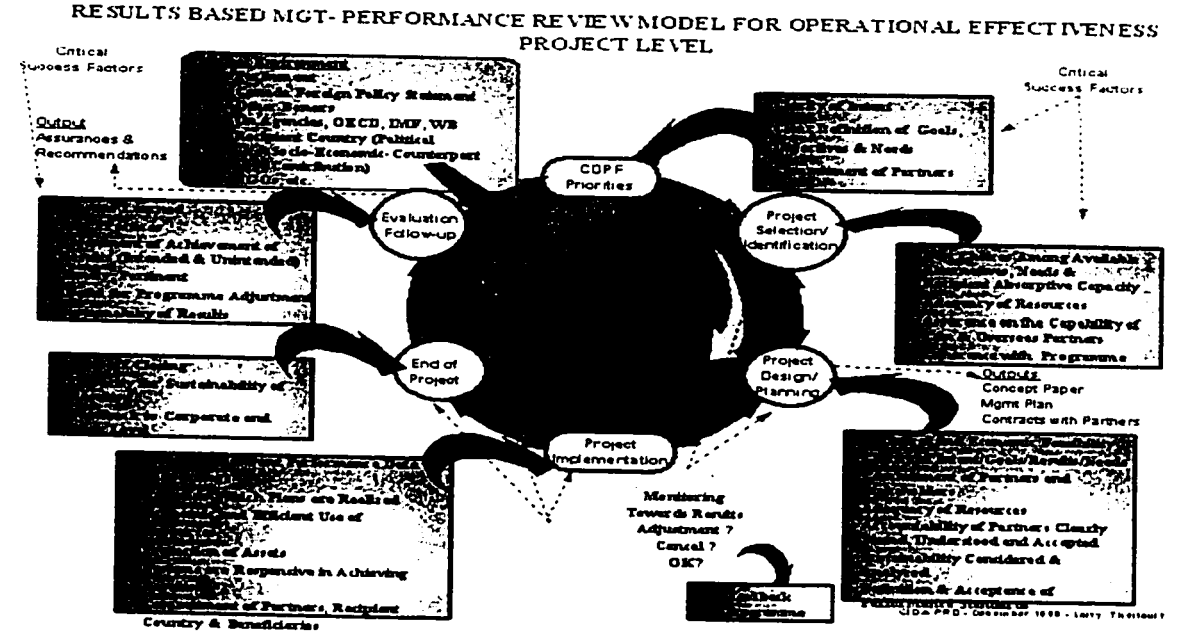

Figure 17 The description of Project Level of "CIDA Roadmap"

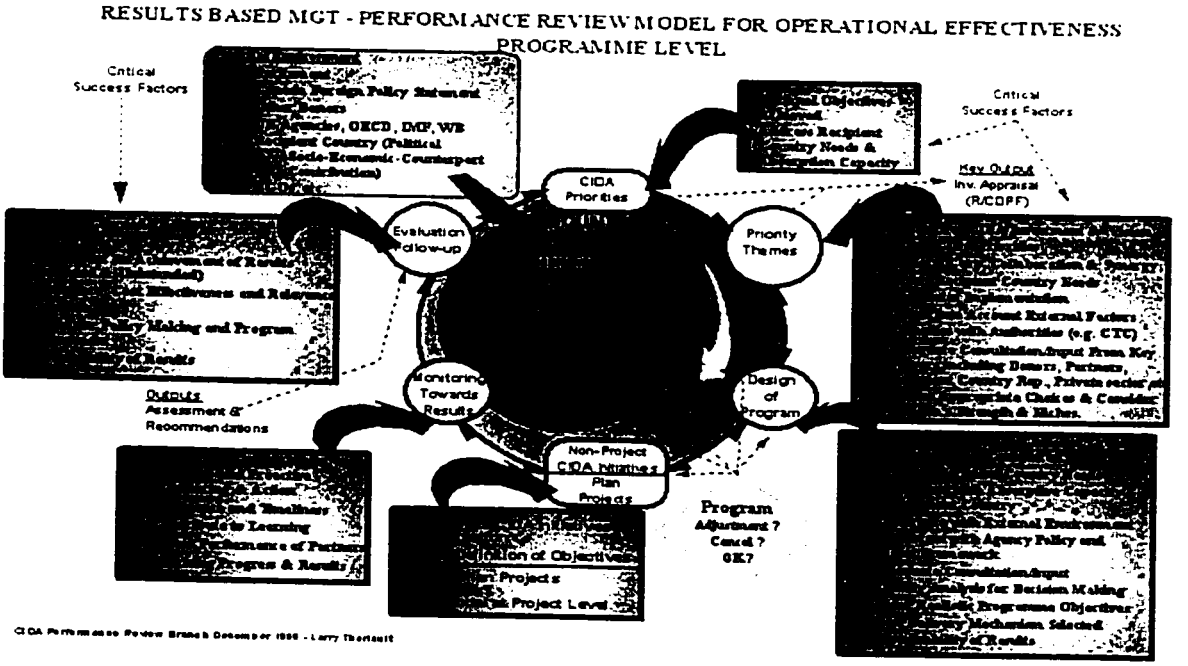

Figure 18 The description of Programme Level of "CIDA Roadmap"

These two figures can help us understand the CIDA processes, and build up "CIDA Roadmap" by *Context Maps* without difficulties.

6.3 Representation "CIDA Roadmap" by Context Maps

The "CIDA Roadmap" includes 33 diagrams. Each diagram illustrates one *Due Diligence* process for a project or a program involving life cycle procedure.

In order to explain how to represent the *Due Diligence* process by *Context Maps*, an application of "CIDA Roadmap - CEE Branch" is described as below:

Here is the original diagram of "CIDA Roadmap - CEE Branch" in the section of "Central Eastern Europe (CEE)":

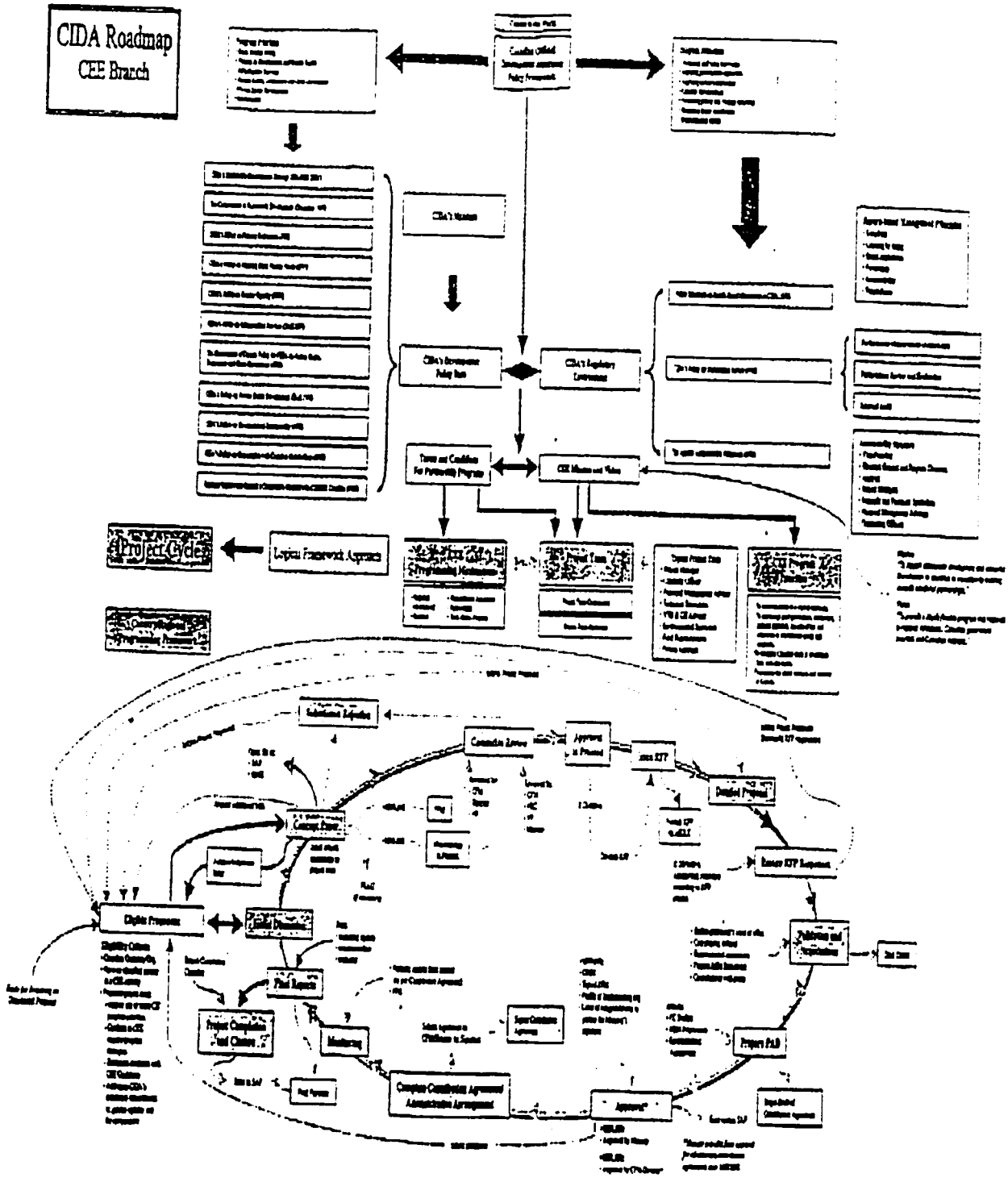

Figure 19 The CIDA Roadmap - CEE Branch

The processes of how to represent the above diagram into *Context Maps* are introduced as follows:

1. Identify the names of top-level structure in "CIDA Roadmap - CEE Branch", and use *Context Maps* terminology to construct the original schemata. Analyze the schemata of "Rational Unified Process (RUP) management", and apply it to the original schemata. After that, the following sets of the schemata are obtained:

(1) {Context Tuple Unique Id}

(2) {Context View}

(3) {Branch}

(4) {Program}

(5) {Edge type}

(6) {Table of Contents}

(7) {Canada in the world}

(8) {Query}

(9) {Requirements}

(10) {Super Stage}

(11) {Stage - rectangle}

(12) {Conditions}

(13) {Task}

(14) {Activity}

(15) {Project Identification}

(16) {Artifacts}

(17) {Tools/Methods}

(18) {CIDA Environment}

(19) {Content Source}

2. Classify the relevant components into the corresponding set of the above schemata. Part of sets in this schemata are introduced as follows:

(1) {Context Tuple Unique Id} is series of numbers for *Context Maps* columns. It is convenient for users to identify each data tuple.

(2) {Context View}is the top-level structure of the "CIDA Roadmap" in this financing business interactive process.

(3) {Branch} includes the following five sections in "CIDA Roadmap":

a. CIDA Roadmap Version 5.1

b. Partnership Branch

c. Communications

d. Central Eastern Europe (CEE)

e. Multilateral

(4) {Program} is the collection of all the "CIDA Roadmap" processes, which belong to the above five sections.

(5) {Canada in the world} is the related information of the CIDA policy framework including CIDA policies, program principles, management principles, terms, conditions, and mandates.

(6) {Requirements} are the pre-conditions or capabilities, which must be reached by the organizations in order to join the CIDA programs.

(7) {Super Stage} depicts the initial life cycles of the CIDA programs or projects in *Due Diligence* process.

(8) {Stage - rectangle} includes the detailed sub-step of life cycles in the CIDA programs or projects.

(9) {Activity} gathers the behaviors and responsibilities in each sub-step, which must be taken during the business process cycles.

(10) {Tools/Methods} summarizes the tools and methods used to monitor and control the programs or projects by CIDA agency.

(11) {CIDA Environments} are the limitations for partners and organizations to join the CIDA programs.

(12) {Content Source} indicates where all the materials in this *Context Maps* come from.

The following diagram shows the schemata of "CIDA Roadmap" by *Context Maps*:

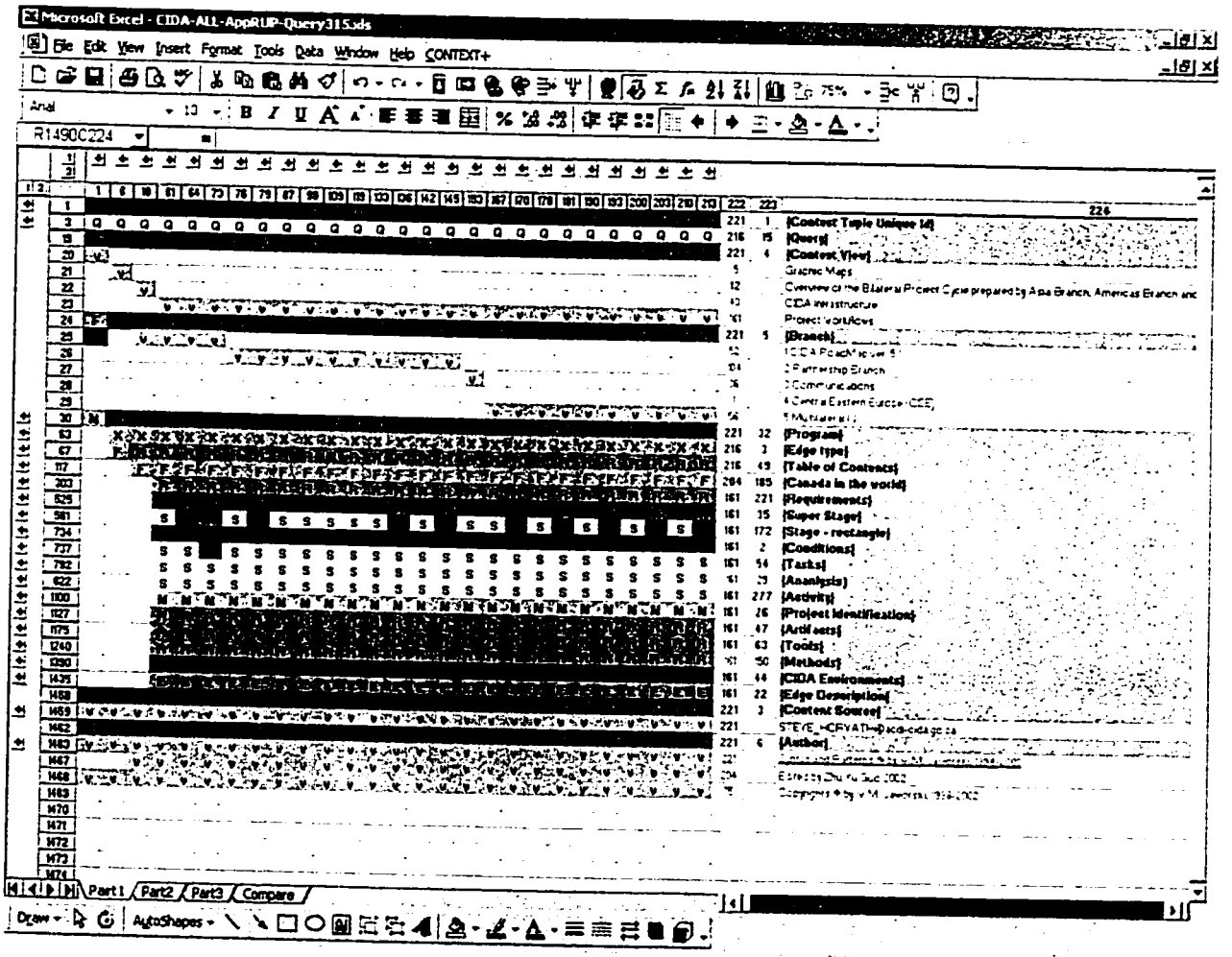

Figure 20 The schemata of "CIDA Roadmap" by *Context Maps*

3. Represent the relationship between the relevant components. In *Context Maps*, each column presents the specific relationships of the components.

4. Here is the example of representation the "CIDA Roadmap - CEE Branch" diagram. This *Context Map* is focus on {Super Stages} set and {Stages} set, which stand for the project cycles and state transitions separately. It also described {Canada in the world} set, {Requirements} set, and {Tools}set, which represent the contents involved in this project cycles.

After querying "1 - CIDA Roadmap - CEE Branch" component in {Program} set by using "CONTEXT+" tools from the established *Context Maps* of "CIDA Roadmap", part of the *Context Maps* in "CIDA Roadmap - CEE Branch" diagram is illustrated as below:

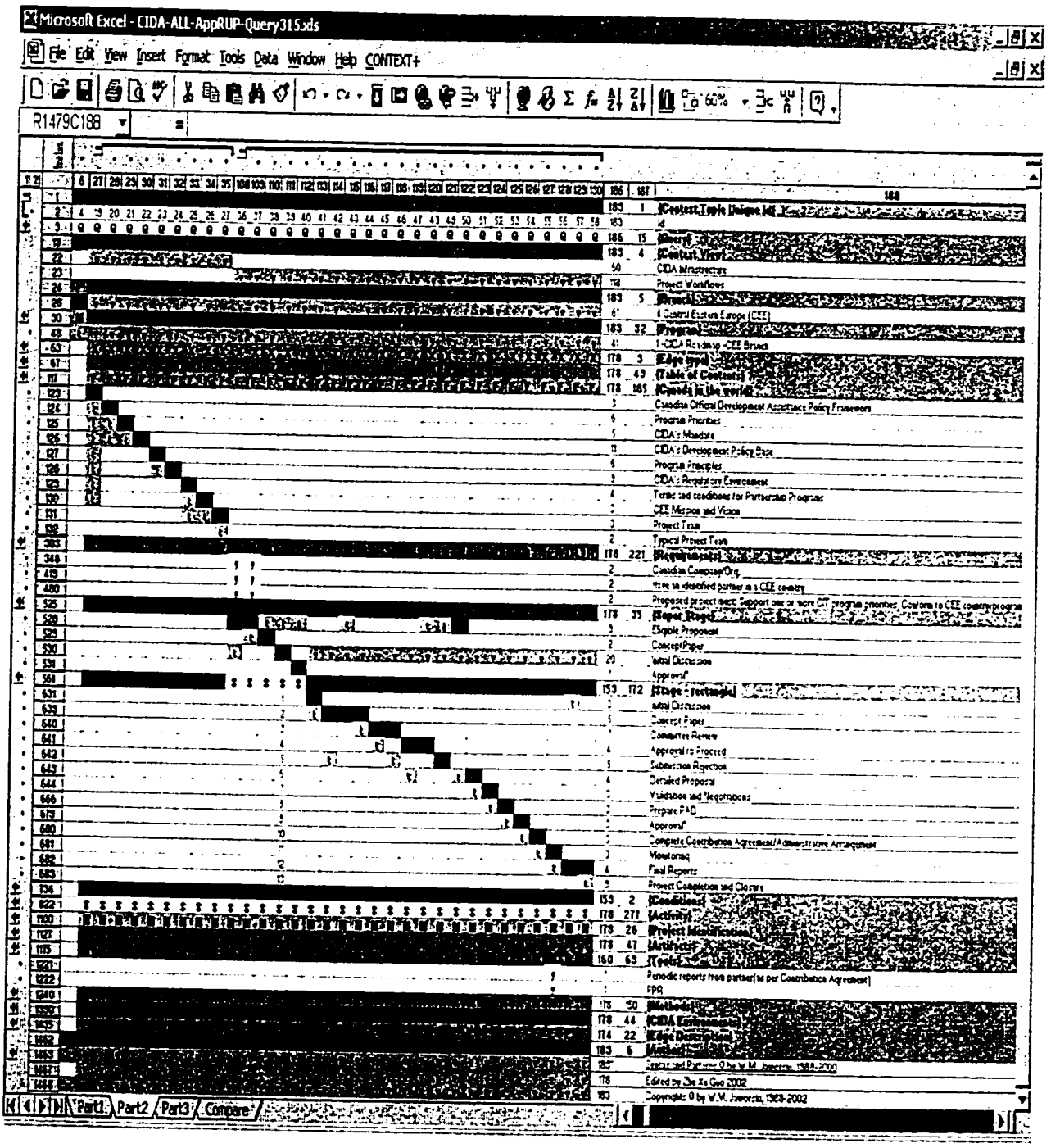

Figure 21 The part of "CIDA Roadmap - CEE Branch" diagram by *Context Maps*

6.4 Advantages of Applying *Context Maps* to "CIDA Roadmap"

Context Maps is a powerful method for representing systems architecture, structures and processes. *Context Maps* can incorporate instances, concepts, roles, knowledge tuples and views. In addition, it is more convenient for users to retrieve and extract the relevant information from the mass and complicated diagrams.

In the extended spreadsheet, a column of roles and the related set members define context tuples. Context tuples are represented by a compounded edge and the connected compounded nodes. Context is defined by an aggregation of context tuples. Active contexts can represent the system behaviors, processes, tasks, procedures and programs. The aggregated context tuples develop the associative model of data.

Compared to diagrams, *Context Maps* are very compact to present a rich context within limited space. The syntax of *Context Maps* is based on relationship-oriented paradigm together with vertical representation, which provides functionality of arrays, spreadsheets, relational tables and graphs. In this report, *Context Maps* are created by using Excel spreadsheets, which assure efficient manipulation of relationships (columns) and heavy reuse of components (rows). The notation supports all phases of the system development process, including recovery and enhancement.

Context Maps has simple semantics, which generate different views of the underlying knowledge for users. By using the *Context Maps* models technology, the information

structure is rewritten from narratives into a knowledge frame, and create schema view of the *Context Maps* model. Only minimal number of syntactical constructions are needed in the model. This provides *Context Maps* notation with modeling capability and power.

Finally, it is more convenient for users to compare the similarities and differences between the processes by *Context Maps* than original diagrams. The powerful tool "CONTEXT+" can retrieve and expresse the relationship of original materials clearly. By simply selecting the specific components, "CONTEXT+" tool can analyze the relationships of each component within the process.

The following illustrates two examples to explain the advantages of using *Context Maps* in "CIDA Roadmap":

1. Comparison in the vertical level:

By querying two components of "4 - NGO - Program Funded NGOs" and "5 - ERIM/PSPO Conference Secretariat" in "CIDA Roadmap", two diagrams can be represented into one *Context Map*. The similarities and differences of these two diagrams can be compared obviously. The {Analysis} set in both processes are the same; however, the sets of {Super Stage}, {Stage}, {Requirements}, {Activities}, {Tools}, and {Methods} are quite different. This *Context Map* clearly describes these processes for comparison and analysis.

Figure 22 shows the comparisons of two diagrams: "4 - NGO - Program Funded NGOs" and "5 - ERIM/PSPO Conference Secretariat" in "CIDA Roadmap":

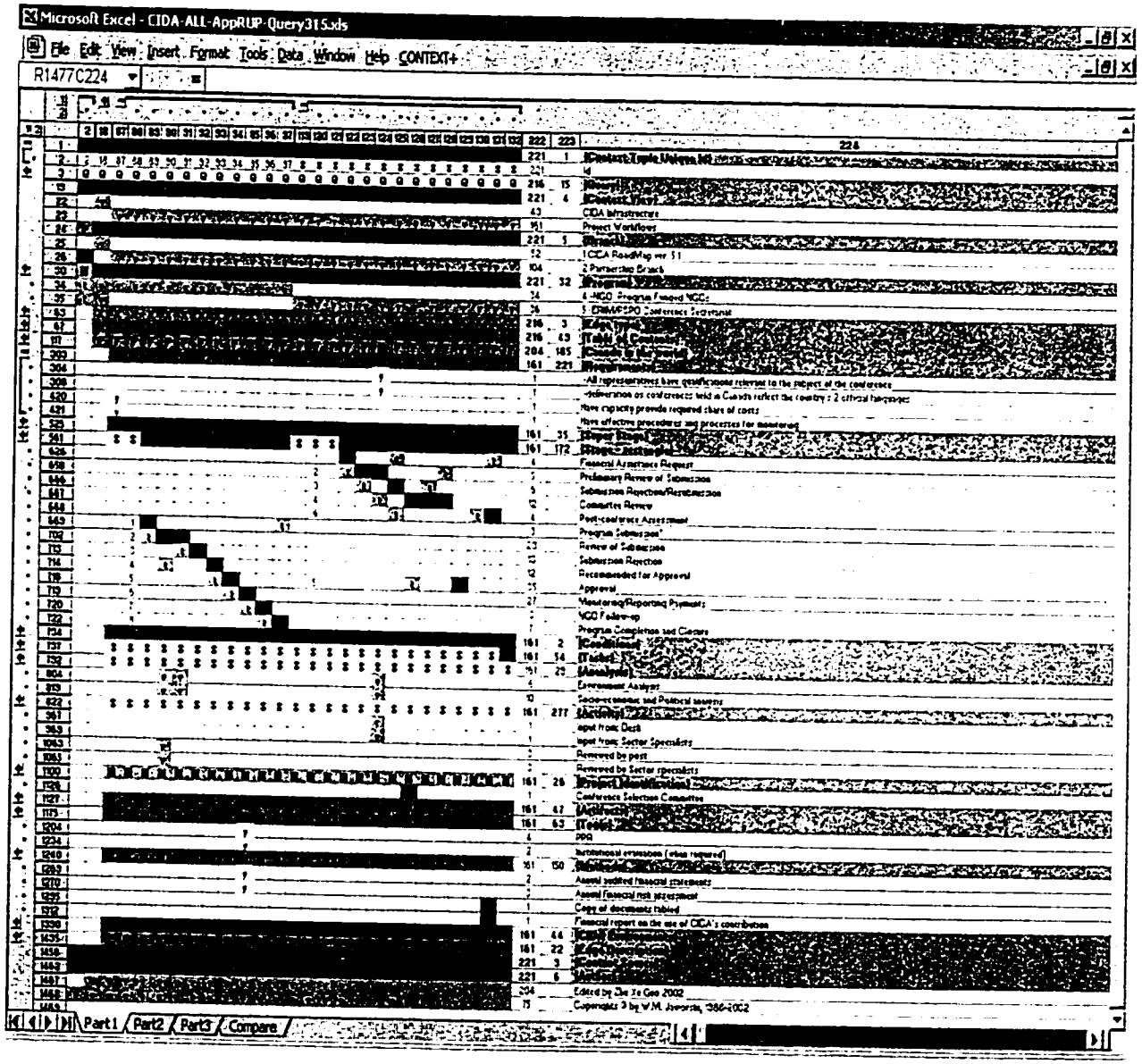

Figure 22 The comparison of two diagrams in "CIDA Roadmap"

2. Comparison in the horizontal level:

After querying "Monitoring/Reporting Payments" component in {Stage - rectangle} set and selecting the sets of {Context View}, {Program}, {Method}, {Tool}, all the information regarding this stage can be organized in one *Context Map*. Other irrelevant information is hidden. From this *Context Map*, we can compare and analyze all the tools and methods, which used in "Monitoring/Reporting Payments" stage from different "CIDA Roadmaps" diagrams.

(1) Between row34 and row62, each character "v" describes a specific program, which is involved in "Monitoring/Reporting Payments" stage. There are totally 9 programs: "4 - NGO-Program Funded NGOs", "10 - ICD-ESDP", "12 - Industrial Cooperation Division (INC) Program", "13 - INGO Division", "1 - Development Information Program", "6 - MFD Bretton Woods Institutions", "7 - MHA Peacebuilding", "11 - MUN Core UN. & Cmnwlth Programme Funding", and "13 - MUN Mine Action Programme".

(2) Between row1175 and row1234, each character "y" stands for a specific tool, which is used in "Monitoring/Reporting Payments" stage of the corresponding program.

(3) Between row1240 and row1341, each character "y" represents a specific method, which is used in "Monitoring/Reporting Payments" stage of the corresponding program.

Figure 23 shows the *Context Maps* that represent "Monitoring/Reporting Payments" stage in different diagrams:

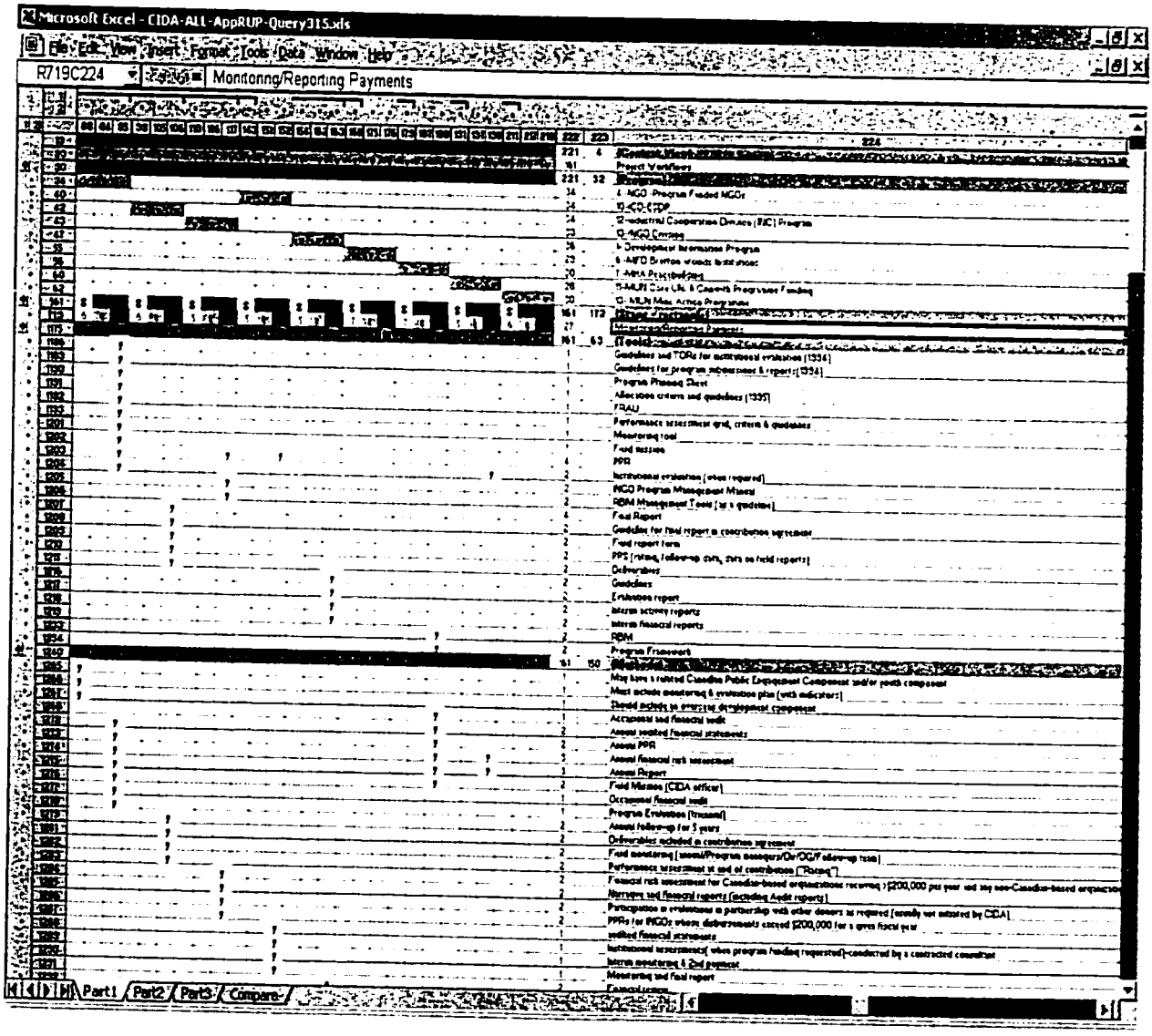

Figure 23 The stage of "Monitoring/Reporting Payments" in different diagrams

Chapter 7

7. Conclusion And Recommendation

7.1 General Conclusions

The following conclusions are drawn from the study of the major report:

1. *Due Diligence Strategy* is one of the procedures we use to study, investigate and evaluate a business opportunity. This process can be represented by *Context Maps* based on concepts and relationships.

2. *Context Maps* enable us to create virtual information maps for the knowledge base system. *Context Maps* are a notation and method for representing systems architecture, structures, processes and reusable templates. *Context Maps* notation allows easy recovery and modeling of generic schemata for processes, objects and views of information systems.

3. *Context Maps* syntax is simple and robust. *Context Maps* models are pattern rich, allow users to specify, query and control the model views. Different views are generated algorithmically to be useful for compilers or end users.

4. "Entrepreneur America" and "Canadian International Development Agency (CIDA) Roadmap" are different species of *Due Diligence* processes. These knowledge can be presented with *Context Maps* by using the popular *MS Excel* spreadsheet.

5. "Rational Unified Process (RUP) Management" is a set of software engineering processes that provide engineers with guidance to streamline the team's development activities.

6. By applying "RUP Management" schemata to "CIDA Roadmap" diagram, the structure of *Contexts Maps* is become normalized.

7. By applying the technology of *Contexts Maps*, representation the *Due Diligence* processes has a lot of advantages. *Contexts Maps* are more convenient for users to retrieve and compare relevant information from the mass and complicated diagrams.

7.2 Recommendations for Future Works

From the results of this report, it is noted that there are still more further works need to be carried out. The following are recommended for future enhancement.

1. *Context Maps* expects to represent the more complex processes. Therefore, the better and more complete theory of *Context Maps* should be improved.

2. For a larger data of the *Context Map* sheet, it takes much time to get results by using the query tools. It is necessary to modify the program of tools to improve the query speed.

3. The tools of *Context Maps* should be expensed to be more convenient and intelligent. Design a more friendly user interface needs to be done in the future.

4. Use Microsoft Excel as an application environment of *Context Maps* has limitation for a large amount of data, since there are only 256 columns are available in the *Excel*. By considering this issue, develop a more efficient method for storing context tuples is another potential work to extent *Context Maps*.

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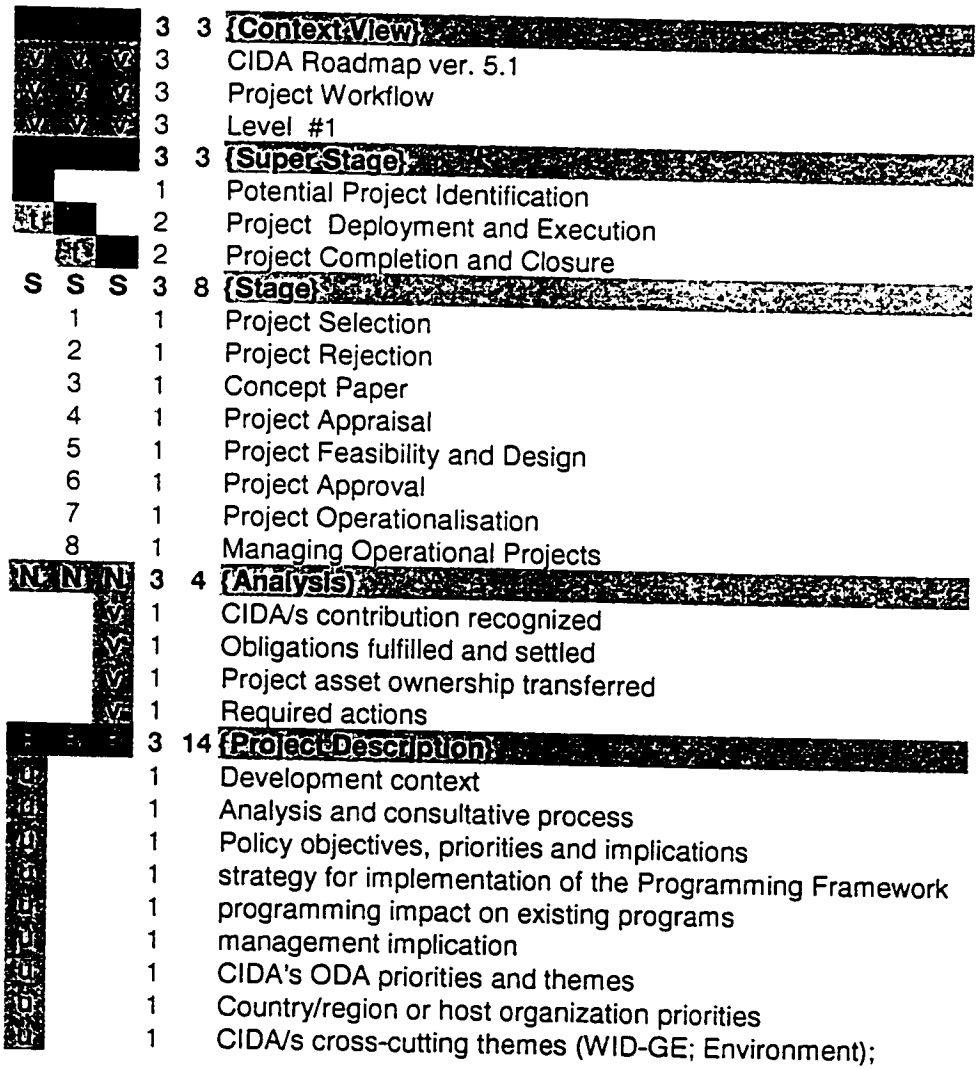
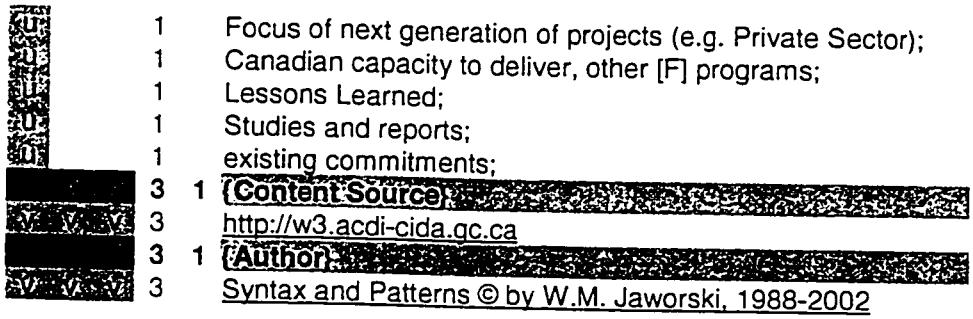
Appendix Collections of *Context Maps*

Due to the *Context Maps* of CIDA Roadmaps is too large to be viewed in one page, it is queried out by each diagram and is displayed by different level. Part of the figures attached below:

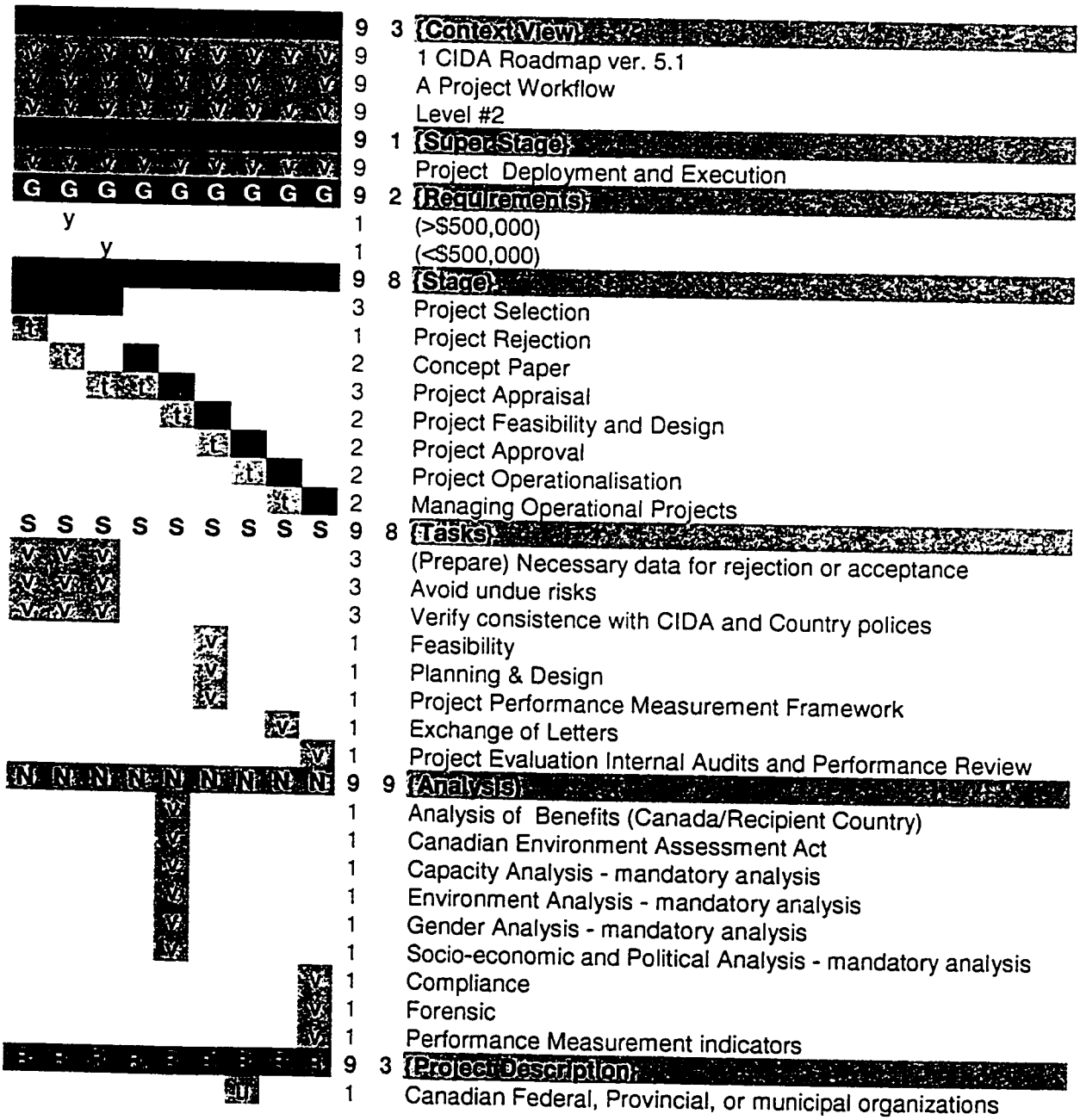
A-1 CIDA Roadmap release 5.1 level 1



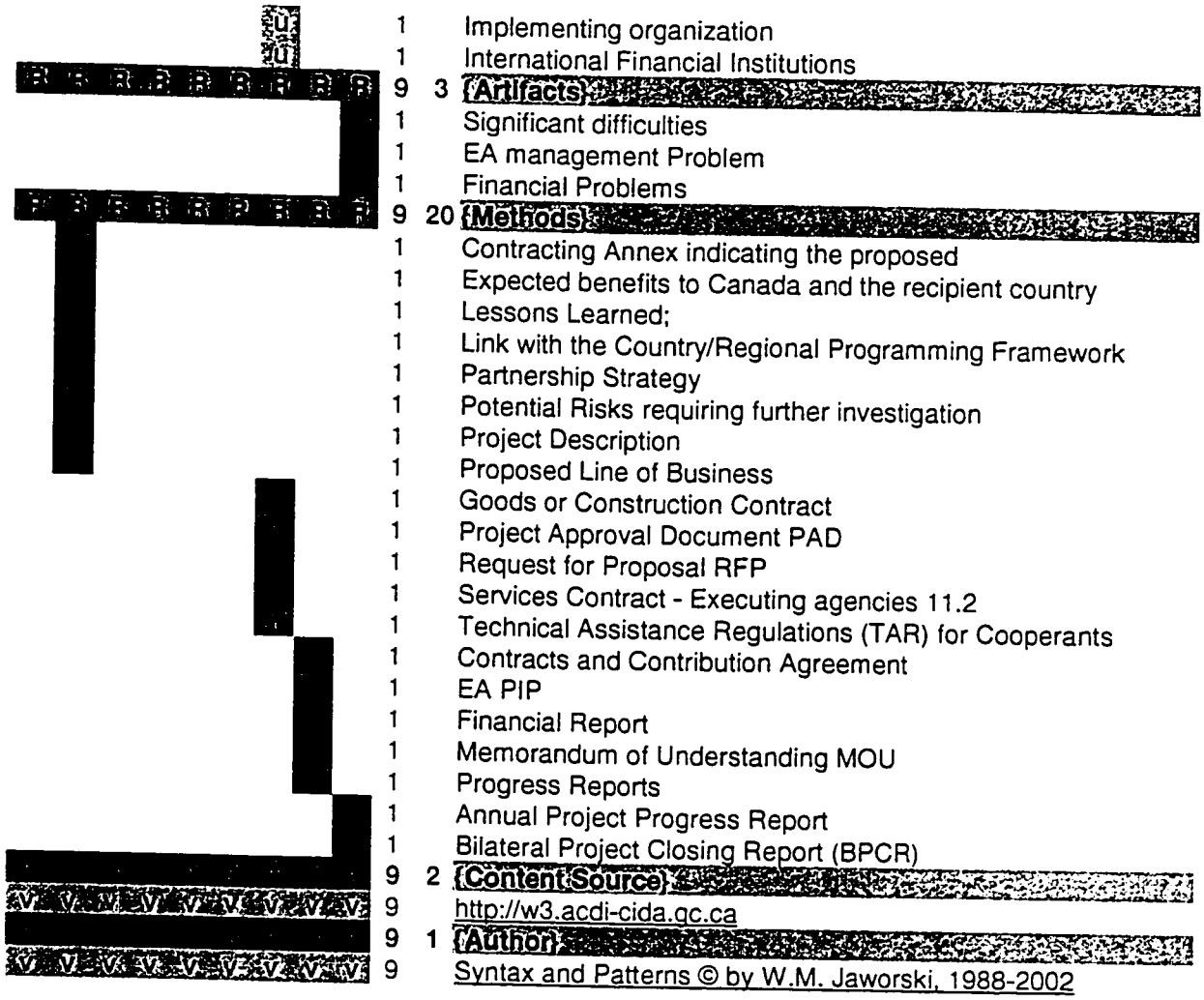


1 Focus of next generation of projects (e.g. Private Sector);
1 Canadian capacity to deliver, other [F] programs;
1 Lessons Learned;
1 Studies and reports;
1 existing commitments;
3 1 {Content Source}
3 http://w3.acdi-cida.gc.ca
3 1 {Author}
3 Syntax and Patterns © by W.M. Jaworski, 1988-2002

A-2 CIDA Roadmap release 5.1 level 2

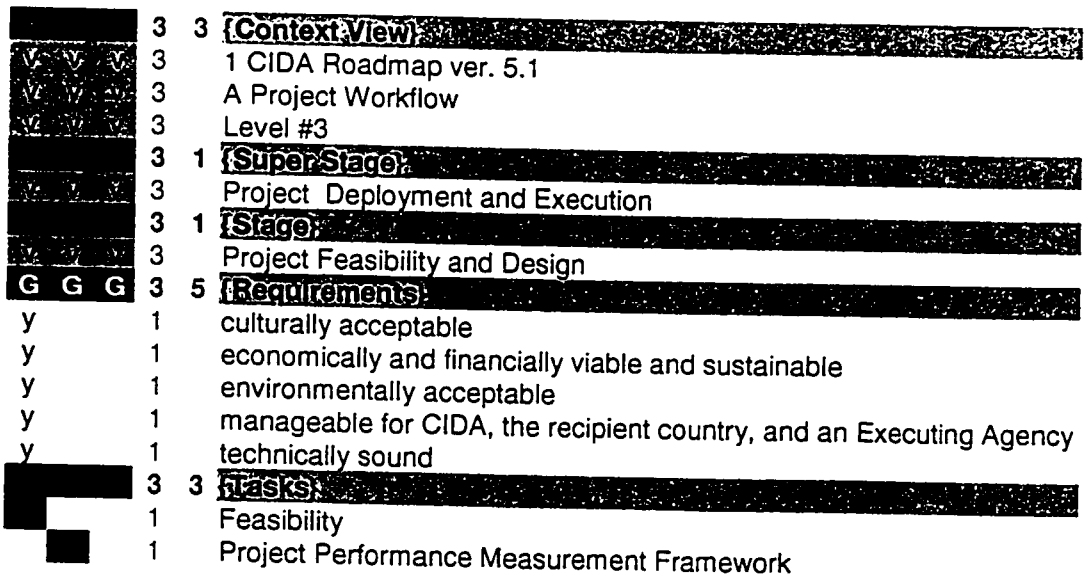


9 3 {Context View}
9 1 CIDA Roadmap ver. 5.1
9 A Project Workflow
9 Level #2
9 1 {Super Stage}
9 Project Deployment and Execution
9 2 {Requirements}
1 (>$500,000)
1 (<$500,000)
9 8 {Stage}
3 Project Selection
1 Project Rejection
2 Concept Paper
3 Project Appraisal
2 Project Feasibility and Design
2 Project Approval
2 Project Operationalisation
2 Managing Operational Projects
9 8 {Tasks}
3 (Prepare) Necessary data for rejection or acceptance
3 Avoid undue risks
3 Verify consistence with CIDA and Country polices
1 Feasibility
1 Planning & Design
1 Project Performance Measurement Framework
1 Exchange of Letters
1 Project Evaluation Internal Audits and Performance Review
9 9 {Analysis}
1 Analysis of Benefits (Canada/Recipient Country)
1 Canadian Environment Assessment Act
1 Capacity Analysis - mandatory analysis
1 Environment Analysis - mandatory analysis
1 Gender Analysis - mandatory analysis
1 Socio-economic and Political Analysis - mandatory analysis
1 Compliance
1 Forensic
1 Performance Measurement indicators
9 3 {Project Description}
1 Canadian Federal, Provincial, or municipal organizations

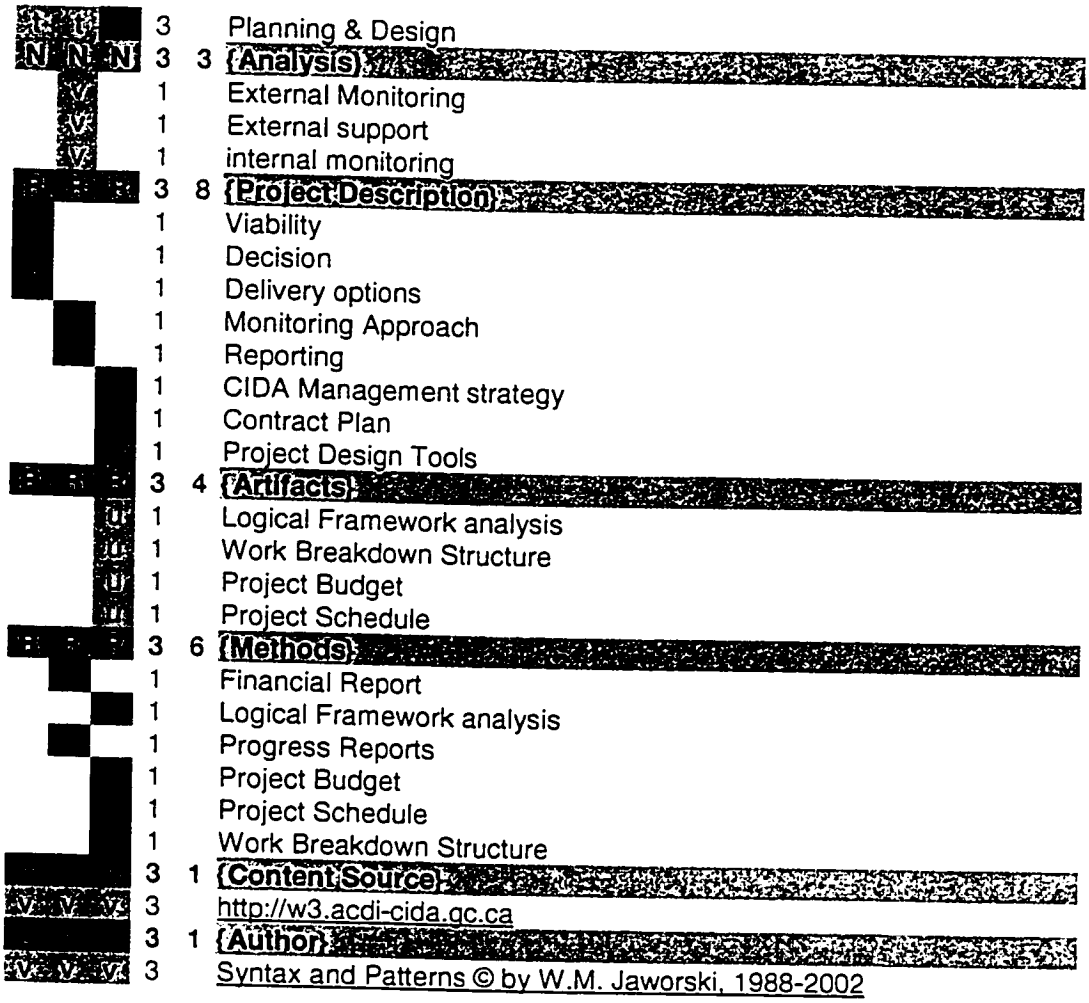


1		Implementing organization
1		International Financial Institutions
9	3	{Artifacts}
1		Significant difficulties
1		EA management Problem
1		Financial Problems
9	20	{Methods}
1		Contracting Annex indicating the proposed
1		Expected benefits to Canada and the recipient country
1		Lessons Learned;
1		Link with the Country/Regional Programming Framework
1		Partnership Strategy
1		Potential Risks requiring further investigation
1		Project Description
1		Proposed Line of Business
1		Goods or Construction Contract
1		Project Approval Document PAD
1		Request for Proposal RFP
1		Services Contract - Executing agencies 11.2
1		Technical Assistance Regulations (TAR) for Cooperants
1		Contracts and Contribution Agreement
1		EA PIP
1		Financial Report
1		Memorandum of Understanding MOU
1		Progress Reports
1		Annual Project Progress Report
1		Bilateral Project Closing Report (BPCR)
9	2	{Content Source}
9		http://w3.acdi-cida.gc.ca
9	1	{Author}
9		Syntax and Patterns © by W.M. Jaworski, 1988-2002

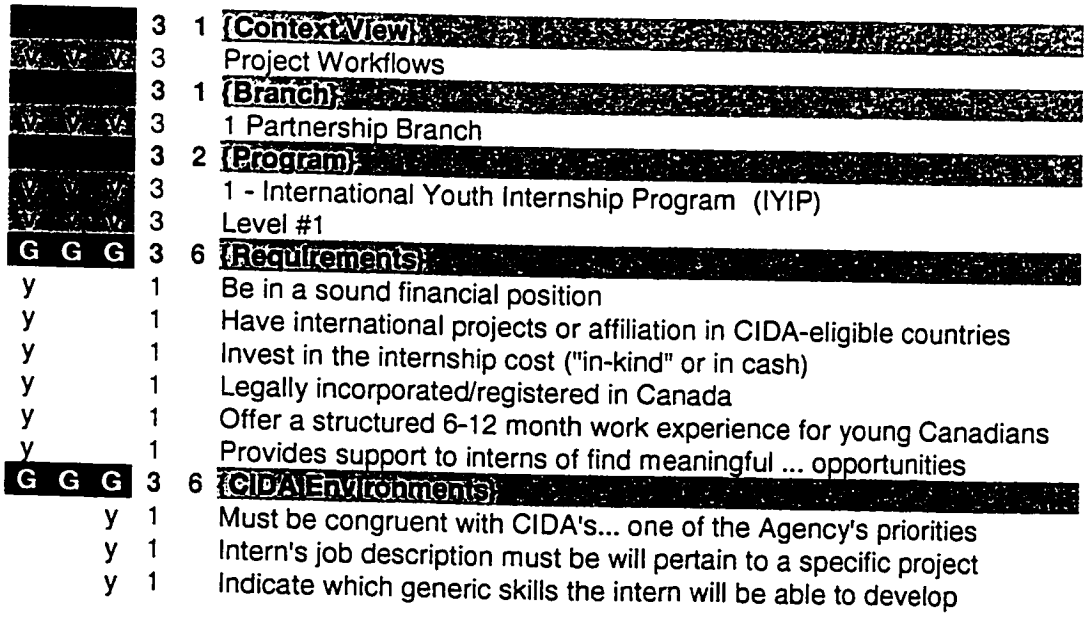
A-3 CIDA Roadmap release 5.1 level 3

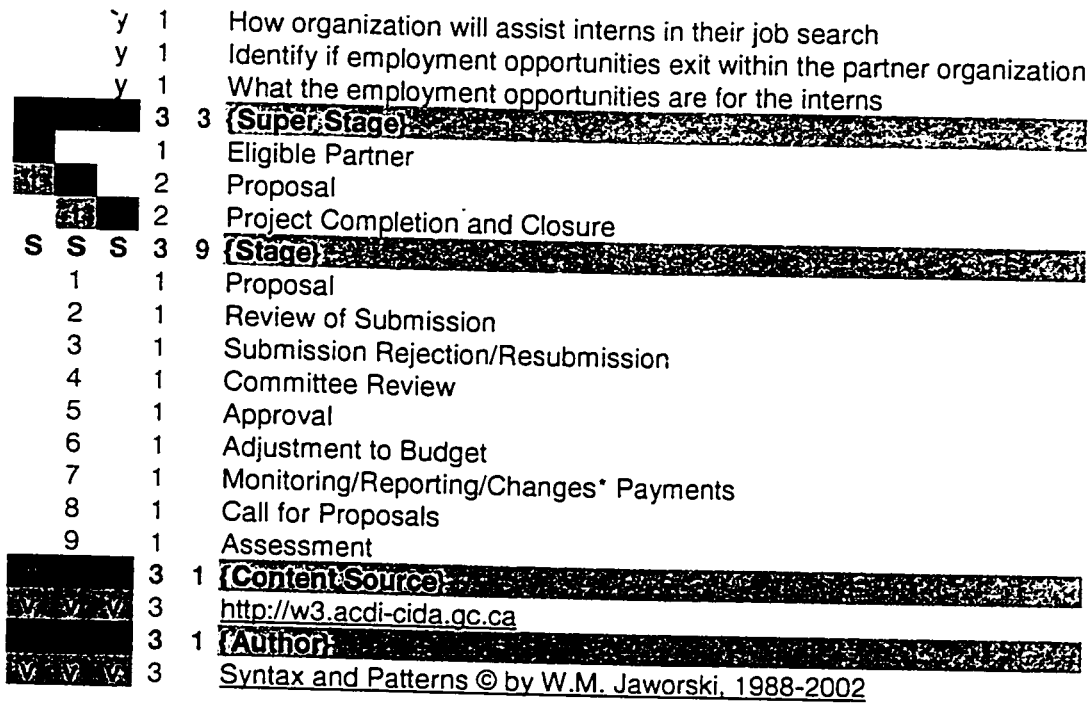


3	3	{Context View}
3		1 CIDA Roadmap ver. 5.1
3		A Project Workflow
3		Level #3
3	1	{Super Stage}
3		Project Deployment and Execution
3	1	{Stage}
3		Project Feasibility and Design
3	5	{Requirements}
1		culturally acceptable
1		economically and financially viable and sustainable
1		environmentally acceptable
1		manageable for CIDA, the recipient country, and an Executing Agency
1		technically sound
3	3	{Tasks}
1		Feasibility
1		Project Performance Measurement Framework

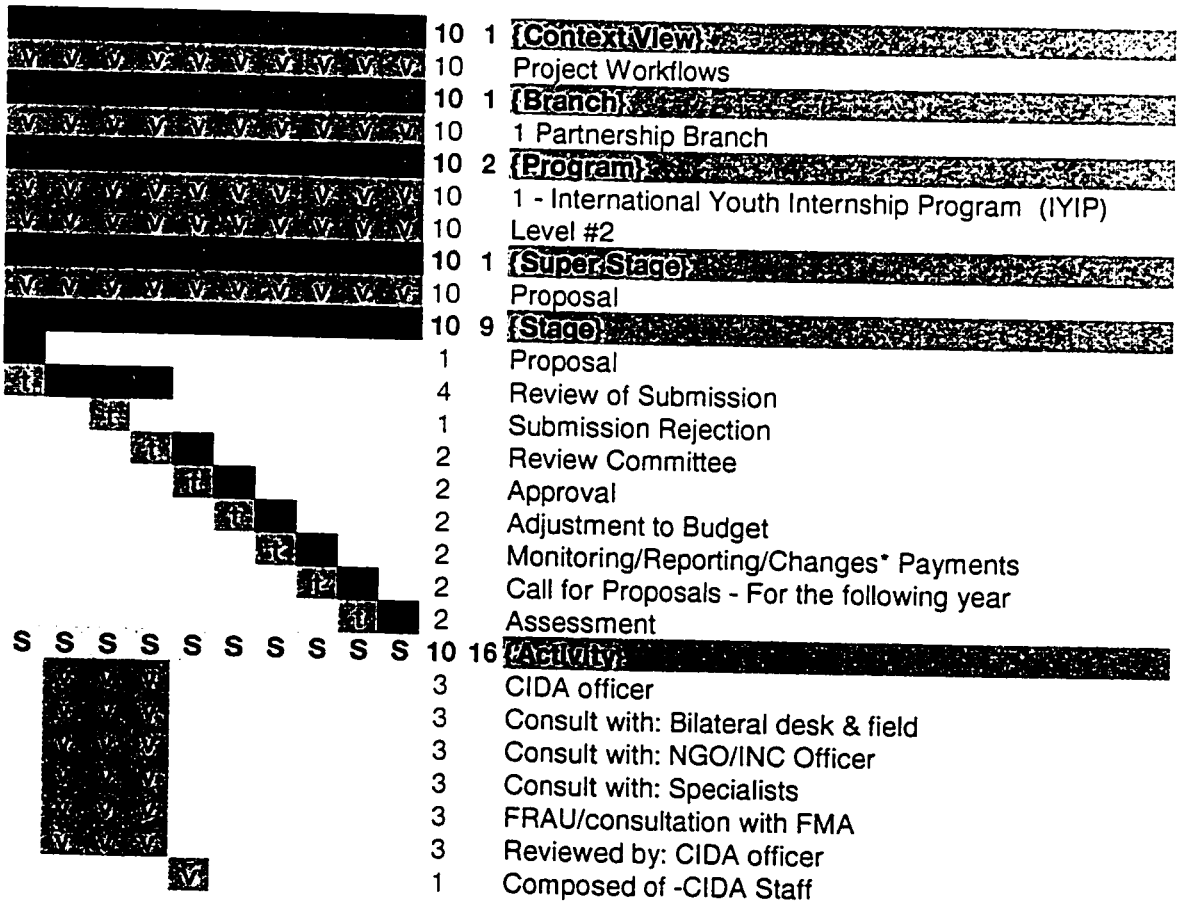


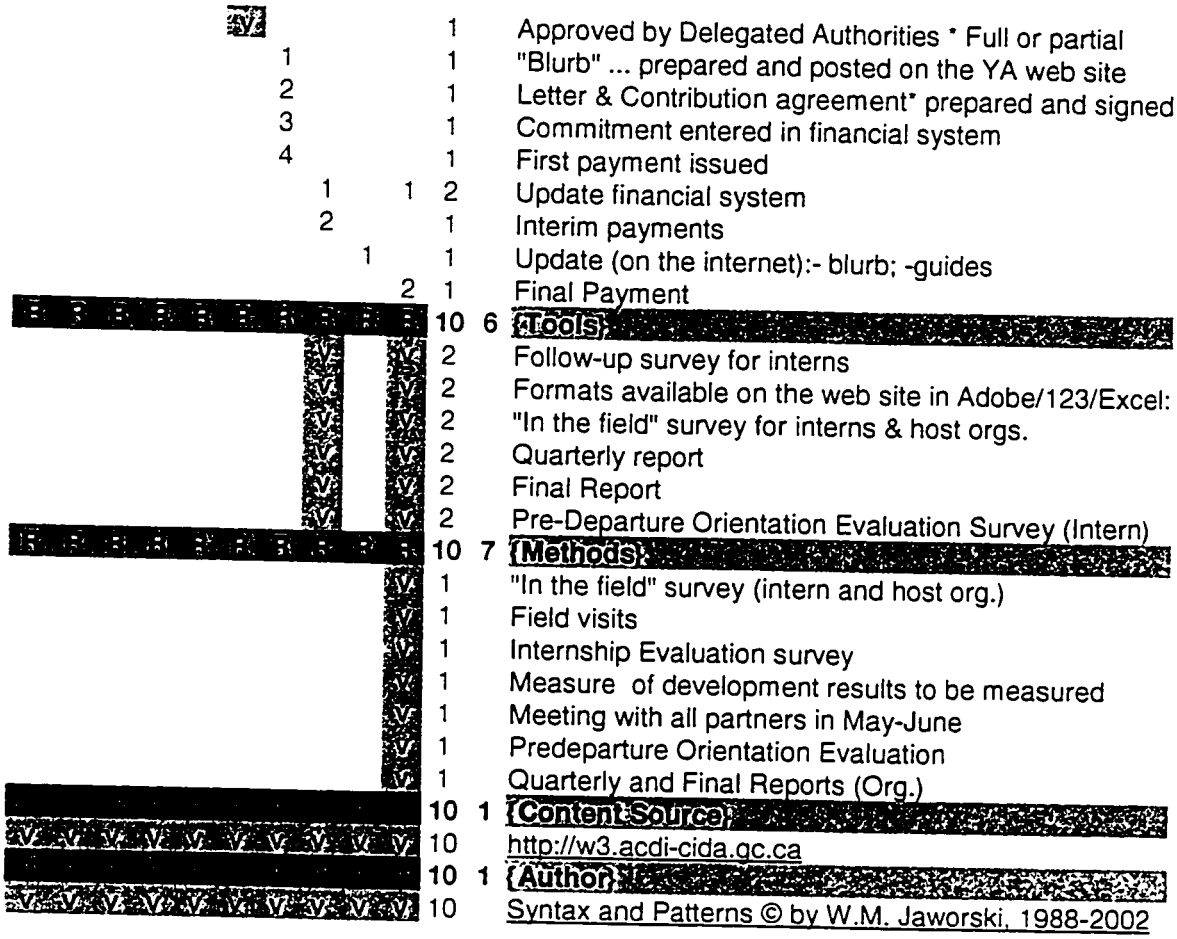
A-4 International Youth Internship Program (IYIP) level 1



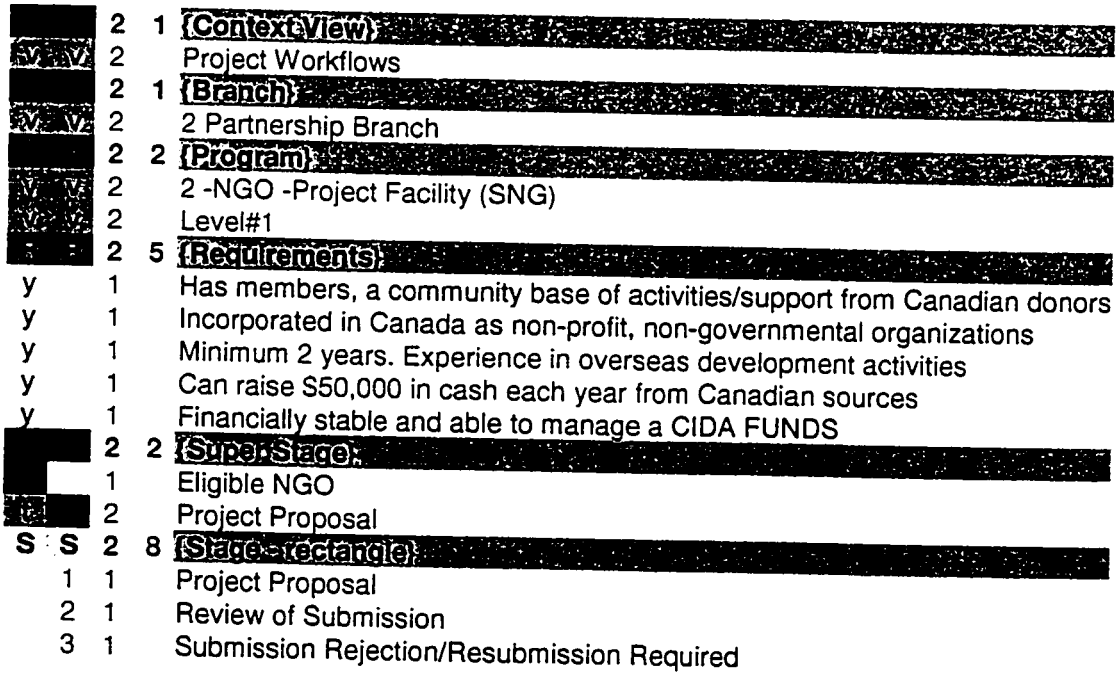


A-5 International Youth Internship Program (IYIP) level 2



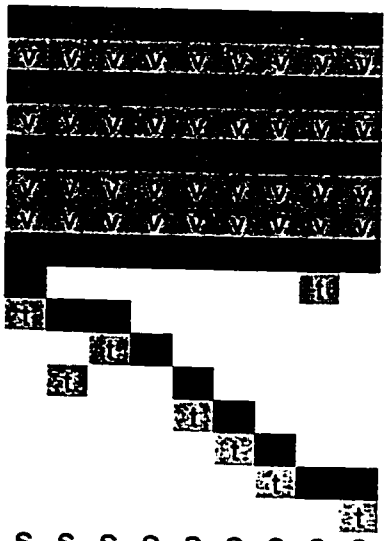


A-6 NGO -Project Facility (SNG) level 1

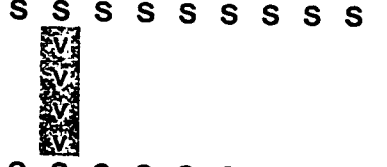


4 1 Committee Review
5 1 Approval
6 1 Monitoring/Reporting
7 1 Assessment */Renewal
8 1 Project Completion and Closure
2 1 {Content Source}
2 http://w3.acdi-cida.gc.ca/cida_ind.nsf/
2 1 {Author}
2 Syntax and Patterns © by W.M. Jaworski, 1988-2002

A-7 NGO -Project Facility (SNG) level 2



9 1 {Context View}
9 Project Workflows
9 1 {Branch}
9 2 Partnership Branch
9 2 {Program}
9 2 -NGO -Project Facility (SNG)
9 Level#2
9 8 {Stage - rectangle}
2 Project Proposal
3 Review of Submission
2 Submission Rejection/Resubmission Required
2 Committee Review
2 Approval
2 Monitoring/Reporting
3 Assessment */Renewal
1 Project Completion and Closure



9 4 {Analysis}
1 Areas of innovation
1 Capacity Analysis - mandatory analysis
1 Gender Analysis - mandatory analysis
1 Socio-economic and Political analysis

9 12 {Activity}
1 Input from: Desk
1 Input from: Post
1 Input from: Sector Specialists
1 Reviewed by: Project officer
1 Recommended by-CIDA Staff
1 Recommended by -External advisors
1 Recommended by NPF Advisory Committee
1 Approval by Delegated Authorities
1 Contribution agreements prepared and signed
1 Commitment entered in financial system
1 Update financial system
1 Issue Interim/final payments

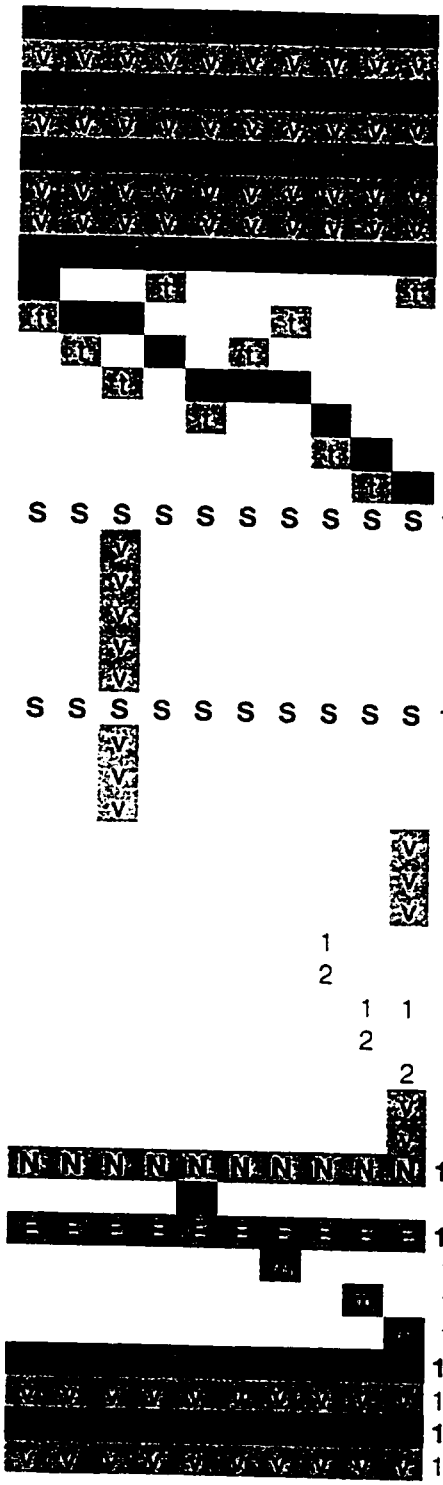
9 13 {Tools}
2 Final Report
2 Institutional evaluation (when required)
1 Guidelines and TORs for institutional evaluation (1994)
1 Guidelines for program submissions & reports(1994)

y			1		Program Planning Sheet
y			1		Allocation criteria and guidelines (1995)
y			1		FRAU
y			1		Performance assessment grid, criteria & guidelines
y			1		PPR/RBM
y			1		Guide to NGO Project Facility
y			1		Budget
y			1		Annex A
y			1		Proof of Payment
			9	6	{Methods}
y	y	y	3		Canadian Partner Evaluations
y	y	y	3		Interim/progress reports
y	y	y	3		Occasional financial audit
y	y	y	3		Review Annual audited financial statements
y	y	y	3		Review Self-Assessment Profile
y	y	y	3		Site Visits
			9	1	{Edge:Description}
			1		>&S50,000
			9	1	{Content:Source}
			9		http://w3.acdi-cida.gc.ca/cida_ind.nsf/
			9	1	{Author}
			9		Syntax and Patterns © by W.M. Jaworski, 1988-2002

A-8 RIM/PSPO Conference Secretariat level 1

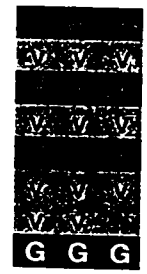
			3	1	{Context:View}
			3		Project Workflows
			3	1	{Branch}
			3		2 Partnership Branch
			3	2	{Program}
			3		5 -ERIM/PSPO Conference Secretariat
			3		Level#1
			3	2	{Requirements}
y			1		Conference organized by legally constituted Canadian ... and private sectors
	y		1		To be submitted in writing and electronic format as early as possible ...
			3	3	{SuperStage}
			1		Eligible Organization
			2		Financial Assistance Request
			2		Post-conference Assessment
S	S	S	3	7	{Stage:rectangle}
	1		1		Financial Assistance Request
	2		1		Preliminary Review of Submission
	3		1		Submission Rejection/Resubmission
	4		1		Committee Review
	5		1		Approval
	6		1		Payment Issued
	7		1		Post-conference Assessment
			3	1	{Content:Source}
			3		http://w3.acdi-cida.gc.ca/cida_ind.nsf/
			3	1	{Author}
			3		Syntax and Patterns © by W.M. Jaworski, 1988-2002

A-9 ERIM/PSPO Conference Secretariat level 2



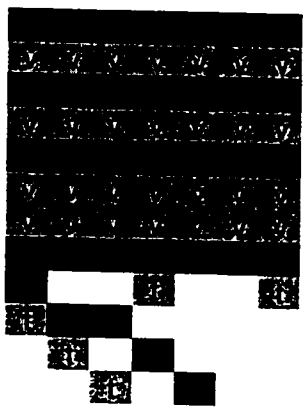
10 1 {Context:View}
10 Project Workflows
10 1 {Branch}
10 2 Partnership Branch
10 2 {Program}
10 5 -ERIM/PSPO Conference Secretariat
10 Level#2
10 7 {Stage=rectangle}
3 Financial Assistance Request
4 Preliminary Review of Submission
3 Submission Rejection/Resubmission
4 Committee Review
2 Approval
2 Payment Issued
2 Post-conference Assessment
10 5 {Analysis}
1 Analysis of Benefits (Canada/Recipient Country)
1 Capacity Analysis
1 Environment Analysis
1 Gender Analysis
1 Socio-economic and Political analysis
10 13 {Activity}
1 Input from: Desk
1 Input from: Sector Specialists
1 Reviewed by Conference Secretariat
1 Copy of documents tabled
1 Financial report on the use of CIDA's contribution
1 Report detailing results & recommendations of conference
1 Contribution agreements * prepared and signed
1 Commitment entered in financial system
2 Financial system updated
1 Payment
1 Final payments issued
1 Analysis of final narrative & financial reports
1 Holdback Released
10 1 {Project Identification}
1 Conference Selection Committee
10 3 {Edge:Description}
1 Refusal/request for additional info
1 80% of approved contribution amount
1 Up to 20%
10 1 {Content Source}
10 http://w3.acdi-cida.gc.ca/cida_ind.nsf/
10 1 {Author}
10 Syntax and Patterns © by W.M. Jaworski, 1988-2002

A-10 ICD-Scholarship Program (CIDA Awards for Canadians) level 1

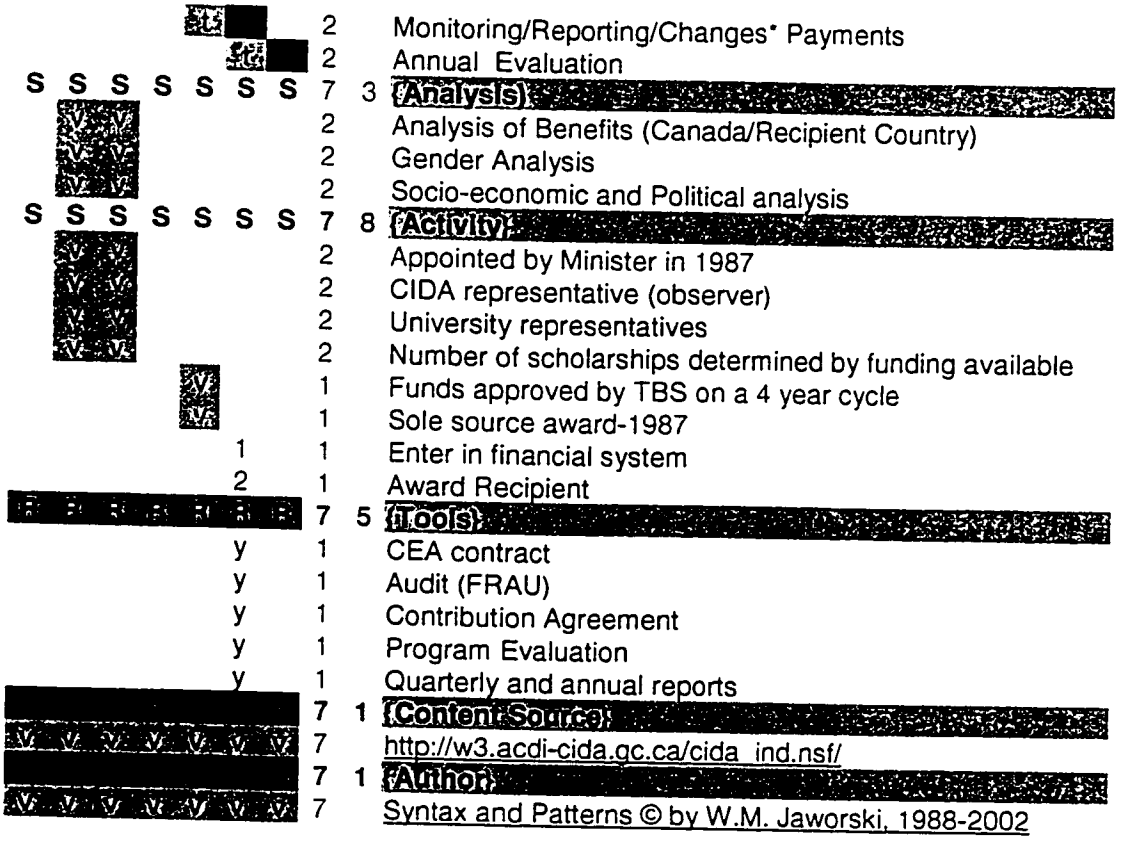


9 3 {ContextView}
9 Project Workflows
9 2 {Branch}
9 2 Partnership Branch
9 17 {Program}
9 7 -ICD-Scholarship Program (CIDA Awards for Canadians) Level#1
G G G 9 9 {CIDAEnvironments}
y 1 Canadian citizens or landed immigrants
y 1 University degree/diploma or professional
y 1 Admitted to a recognized masters of Bus. Admin. Program
y 1 Substantive work experience
y 1 Demonstrate a commitment to international
y 1 Personal commitment to addressing the development needs of a host country
y 1 Innovative Research Awards
y 1 Professional Leadership Awards
y 1 International Enterprise Cooperation Awards
9 3 {SuperStage}
1 Qualified Applications
8 Proposed Award
2 Annual Evaluation
S S S 9 6 {Stage_rectangle}
1 3 Proposed Award
2 4 Review/Selection of Applicants
3 3 Submission Rejection
4 3 Executing Agency
5 3 Monitoring/Reporting/Changes' Payments
6 2 Annual Evaluation
9 2 {ContentSource}
9 http://w3.acdi-cida.gc.ca/cida_ind.nsf/
9 6 {Author}
9 Syntax and Patterns © by W.M. Jaworski, 1988-2002

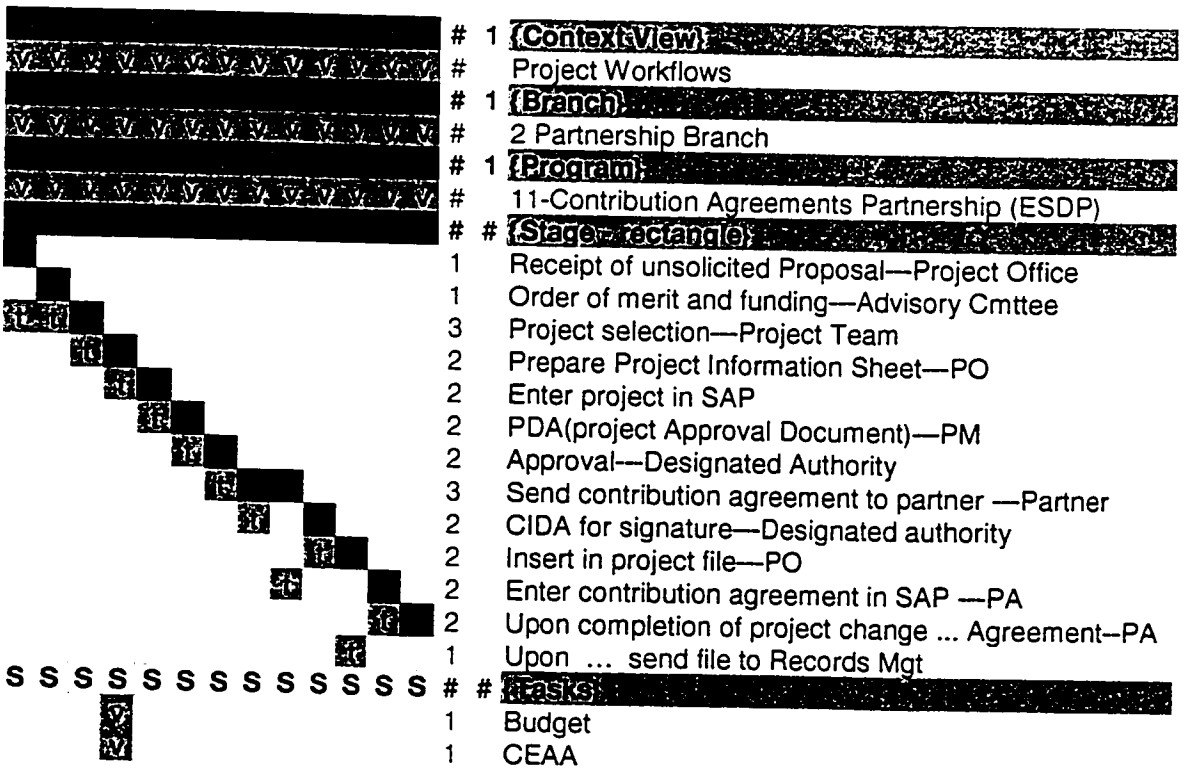
A-11 ICD-Scholarship Program (CIDA Awards for Canadians) level 2

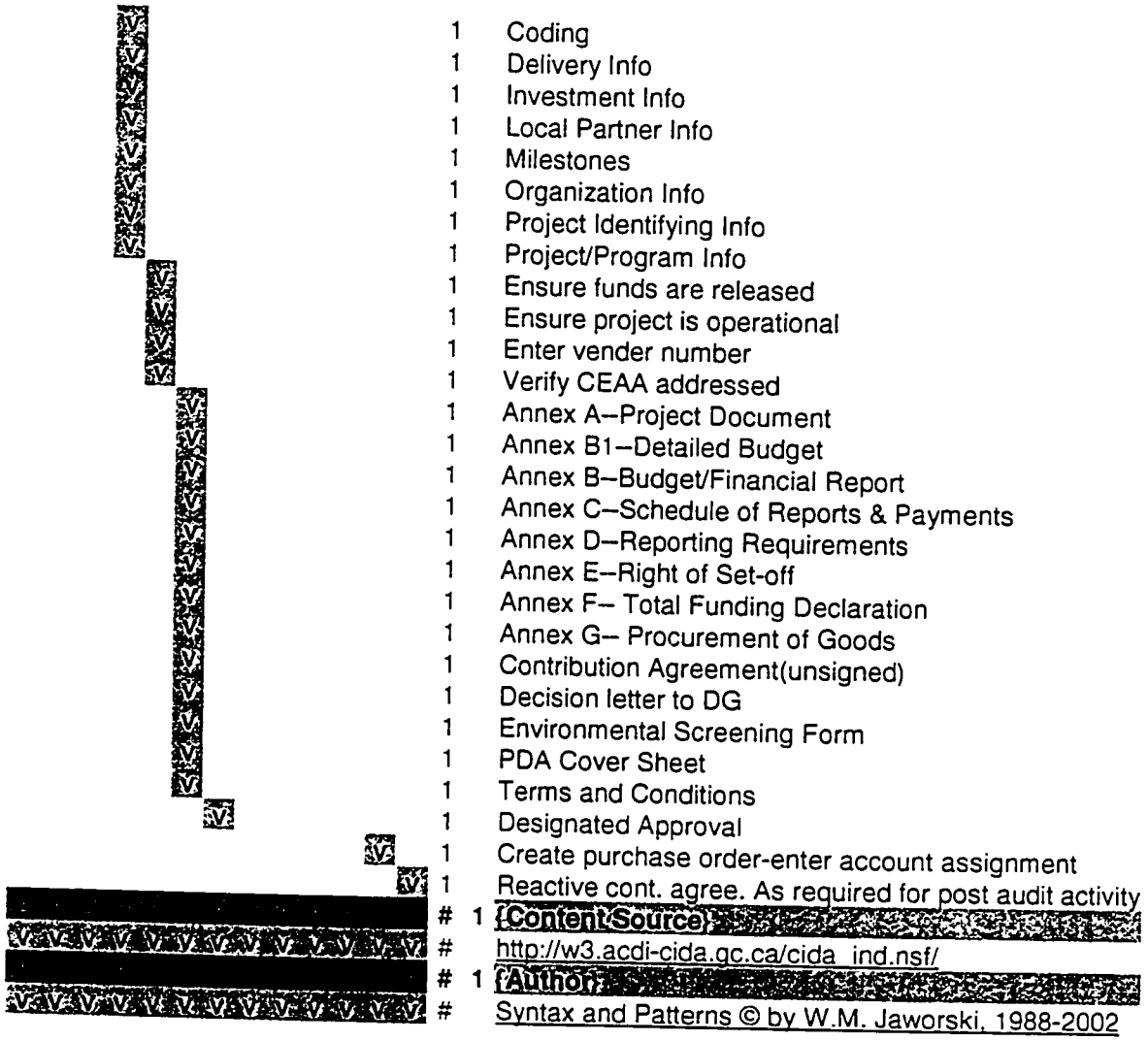


7 1 {ContextView}
7 Project Workflows
7 1 {Branch}
7 2 Partnership Branch
7 2 {Program}
7 7 -ICD-Scholarship Program (CIDA Awards for Canadians)
7 Level#2
7 6 {Stage_rectangle}
3 Proposed Award
3 Review/Selection of Applicants
2 Submission Rejection
2 Executing Agency



A-12 Contribution Agreements Partnership (ESDP)





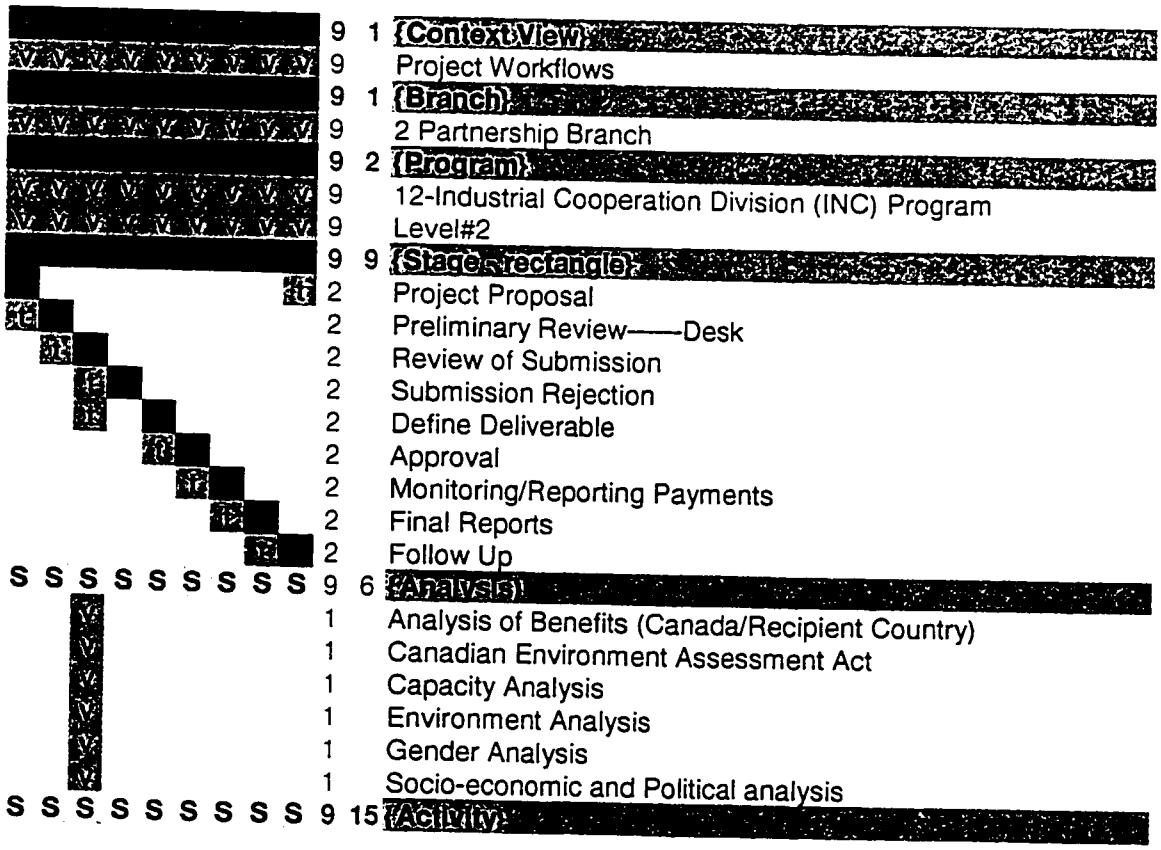
1 Coding
1 Delivery Info
1 Investment Info
1 Local Partner Info
1 Milestones
1 Organization Info
1 Project Identifying Info
1 Project/Program Info
1 Ensure funds are released
1 Ensure project is operational
1 Enter vender number
1 Verify CEAA addressed
1 Annex A--Project Document
1 Annex B1--Detailed Budget
1 Annex B--Budget/Financial Report
1 Annex C--Schedule of Reports & Payments
1 Annex D--Reporting Requirements
1 Annex E--Right of Set-off
1 Annex F-- Total Funding Declaration
1 Annex G-- Procurement of Goods
1 Contribution Agreement(unsigned)
1 Decision letter to DG
1 Environmental Screening Form
1 PDA Cover Sheet
1 Terms and Conditions
1 Designated Approval
1 Create purchase order-enter account assignment
1 Reactive cont. agree. As required for post audit activity
1 {Content Source}
http://w3.acdi-cida.gc.ca/cida_ind.nsf/
1 {Author}
Syntax and Patterns © by W.M. Jaworski, 1988-2002

A-13 Industrial Cooperation Division (INC) Program level 1

2 1 {Context View}
2 Project Workflows
2 1 {Branch}
2 2 Partnership Branch
2 2 {Program}
2 12-Industrial Cooperation Division (INC) Program
2 Level#1
2 14 {Requirements}
y 1 Must be financially sound
y 1 Must be prepared to assume part of the costs
y 1 Must be subject to corporate income tax
y 1 Must have been in business in Canada for at least 3 years
y 1 Must have had annual sales of > $700,000 for at least 2 consecutive years
y 1 Must have the demonstrated its desire to invest time and resources
y 1 Must hold proprietary rights to the technology ... a developing country
y 1 Brings economic and development benefits to host country

y 1 Brings job creation or preservation
y 1 Contains a component involving transfer of technology, knowledge/skills
y 1 Designed to increase social benefits and minimize adverse impacts in host country
y 1 Implementation should be supported y financial sources outside CIDA
y 1 Involves benefits for Canada
y 1 Specific criteria depending on the mechanism under which proposal is presented
2 2 {SuperStage}
1 Eligible Applicant
2 Project Proposal
S S 2 9 {Stage_rectangle}
1 1 Project Proposal
2 1 Preliminary Review——Desk
3 1 Review of Submission
4 1 Submission Rejection
5 1 Define Deliverable
6 1 Approval
7 1 Monitoring/Reporting Payments
8 1 Final Reports
9 1 Follow Up
2 1 {Content Source}
2 http://w3.acdi-cida.gc.ca/cida_ind.nsf/
2 1 {Author}
2 Syntax and Patterns © by W.M. Jaworski, 1988-2002

A-14 Industrial Cooperation Division (INC) Program level 2



		1	2 years of projects: Study/project support
		1	3 mechanisms: investment/Professional Service/PPI
		1	Submitted via Automated System(APS)
		1	Desk
		1	Post
		1	Reviewed by Interdepartmental committee consultation
		1	Deliverable defined/negotiated with client firm
		1	Approval by Delegated Authorities
	1	1	Commitment entered in financial system
	1	1	Contribution agreements * prepared and signed
	1	1	Financial system updated
	2	1	Payments issued
	3	1	Disbursements follow the the deliverable schedule
		1	Follow-up on all projects for 5 years
		1	Studies with contributions totaling >$100,000
		9 5	{Tools}
y	y	2	Final Report
y	y	2	Guideline for final report in contribution agreement
y	y	2	Field report form
y	y	2	PPS (rating, follow-up data, data on field reports)
y	y	2	Deliverables
		9 4	{Methods}
y	y	2	Annual follow-up for 5 years
y	y	2	Deliverables included in contribution agreement
y	y	2	Field monitoring (Program managers/DG/Follow-up team)
y	y	2	Performance assessment at end of contribution ("Rating")
		9 1	{ContentSource}
		9	http://w3.acdi-cida.gc.ca/cida_ind.nsf/
		9 1	{Author}
		9	Syntax and Patterns © by W.M. Jaworski, 1988-2002

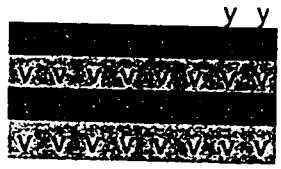
A-15 INGO Division level 1

	2	1	{ContextView}
	2		Project Workflows
	2	1	{Branch}
	2		2 Partnership Branch
	2	2	{Program}
	2		13-INGO Division
	2		Level#1
	2	8	{Requirements}
y	1		Appropriately registered in the country where it is located
y	1		Broad base of financial support
y	1		Development objectives compatible with CIDA's mandate
y	1		Efficiently managed
y	1		Identified as international
y	1		Non-govermental and non-profit
y	1		Preference given to INGOs that : Have headquarters in Canada
y	1		Have strong Canadian linkages/Bring value-added benefits to Canada
	2	2	{SuperStage}
	1		Eligible INGO

[redacted] 2 Program/Project Proposal
S S 2 7 {Stage=rectangle}
1 1 Program/Project Proposal
2 1 Review of Submission
3 1 NGO Mgmt. Committee
4 1 Approval
5 1 Monitoring/Reporting Payments
6 1 Assessment /Renewal
7 1 Submission Rejection
[redacted] 2 1 {Content Source}
[redacted] 2 http://w3.acdi-cida.gc.ca/cida_ind.nsf/
[redacted] 2 1 {Author}
[redacted] 2 Syntax and Patterns © by W.M. Jaworski, 1988-2002

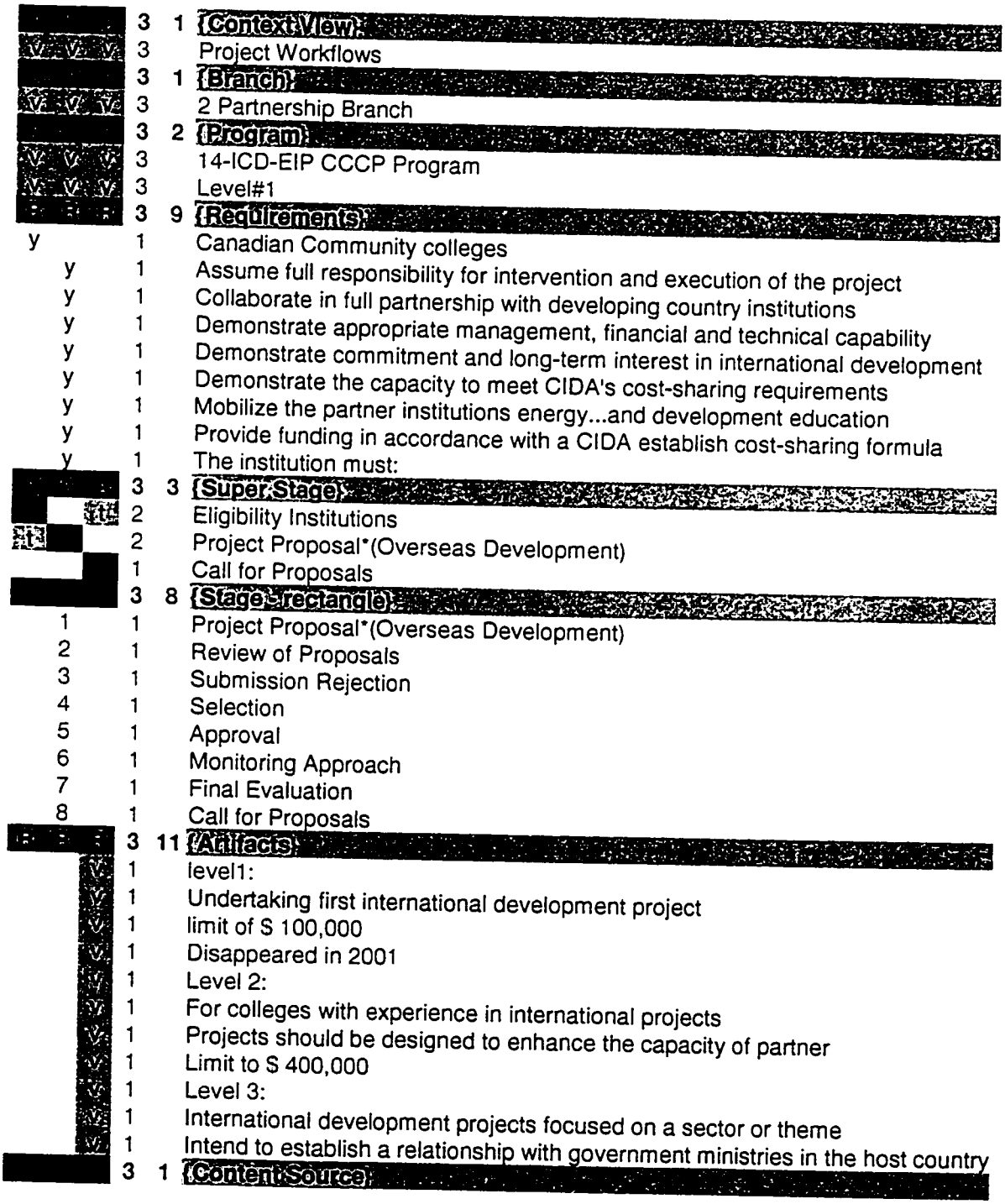
A-16 INGO Division level 2

[redacted] 8 1 {Context View}
[redacted] 8 Project Workflows
[redacted] 8 1 {Branch}
[redacted] 8 2 Partnership Branch
[redacted] 8 2 {Program}
[redacted] 8 13-INGO Division
[redacted] 8 Level#2
[redacted] 8 7 {Stage=rectangle}
[redacted] 2 Program/Project Proposal
[redacted] 3 Review of Submission
[redacted] 3 NGO Mgmt. Committee
[redacted] 2 Approval
[redacted] 2 Monitoring/Reporting Payments
[redacted] 2 Assessment /Renewal
[redacted] 2 Submission Rejection
S S S S S S S S 8 # {Activity}
[redacted] 1 *ad hoc
[redacted] 1 Copies may be sent to policy/sector specialists, if warranted
[redacted] 1 Reviewed by Project Officer
[redacted] 2 Submission added to agenda of weekly NGO Mgmt
1 1 2 Approval Document — once proposal analysis approved
1 1 2 Proposal Analysis –New Partners
[redacted] 1 Approval by Delegated Authorities
1 1 Grant agreements* prepared and signed ....
2 1 Commitment entered in financial system
1 1 Update financial system
2 1 Issue Interim/final payments
[redacted] 8 3 {Tools}
y y 2 PPR
y y 2 INGO Program Management Manual
y y 2 RBM Management Tools (as a guideline)
[redacted] 8 4 {Methods}
y y 2 Financial risk assessment ...when deemed necessary
y y 2 Narrative and financial reports (including Audit reports)
y y 2 Participation in evaluations in partnership ...



y y	2		PPRs for INGOs whose disbursements exceed $200,000
	8	1	{Content Source}
v v y v v v v v	8		http://w3.acdi-cida.gc.ca/cida_ind.nsf/
	8	1	{Author}
v v v v v v v v	8		Syntax and Patterns © by W.M. Jaworski, 1988-2002

A-17 ICD-EIP CCCP Program level 1



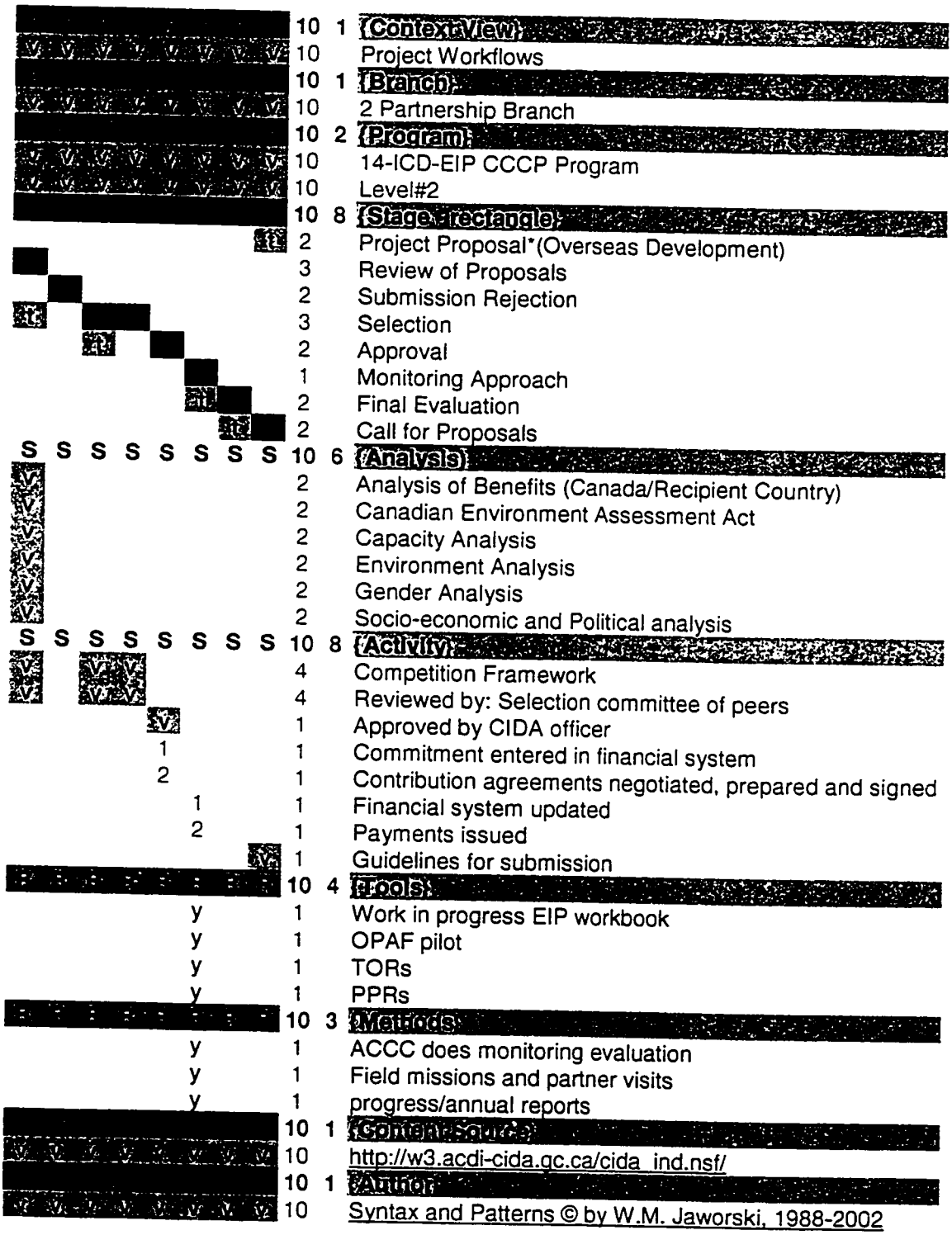
	3	1	{Context View}
v v v	3		Project Workflows
	3	1	{Branch}
v v v	3		2 Partnership Branch
	3	2	{Program}
v v v	3		14-ICD-EIP CCCP Program
v v v	3		Level#1
	3	9	{Requirements}
y	1		Canadian Community colleges
y	1		Assume full responsibility for intervention and execution of the project
y	1		Collaborate in full partnership with developing country institutions
y	1		Demonstrate appropriate management, financial and technical capability
y	1		Demonstrate commitment and long-term interest in international development
y	1		Demonstrate the capacity to meet CIDA's cost-sharing requirements
y	1		Mobilize the partner institutions energy...and development education
y	1		Provide funding in accordance with a CIDA establish cost-sharing formula
y	1		The institution must:
	3	3	{Super Stage}
	2		Eligibility Institutions
	2		Project Proposal*(Overseas Development)
	1		Call for Proposals
	3	8	{Stage rectangle}
1	1		Project Proposal*(Overseas Development)
2	1		Review of Proposals
3	1		Submission Rejection
4	1		Selection
5	1		Approval
6	1		Monitoring Approach
7	1		Final Evaluation
8	1		Call for Proposals
	3	11	{Artifacts}
v	1		level1:
v	1		Undertaking first international development project
v	1		limit of $ 100,000
v	1		Disappeared in 2001
v	1		Level 2:
v	1		For colleges with experience in international projects
v	1		Projects should be designed to enhance the capacity of partner
v	1		Limit to $ 400,000
v	1		Level 3:
v	1		International development projects focused on a sector or theme
v	1		Intend to establish a relationship with government ministries in the host country
	3	1	{Content Source}

3 http://w3.acdi-cida.gc.ca/cida_ind.nsf/

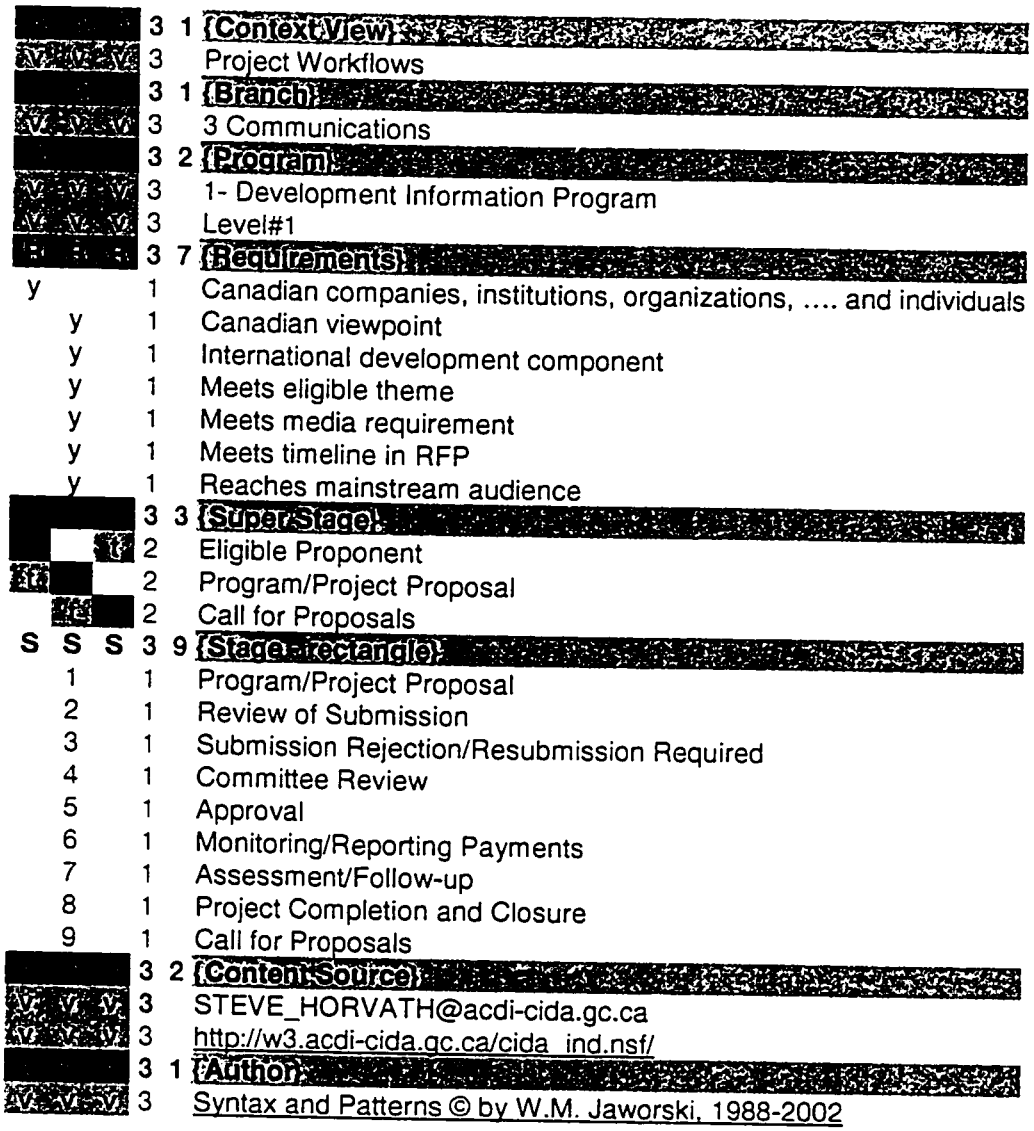
3 1 {Author}

3 Syntax and Patterns © by W.M. Jaworski, 1988-2002

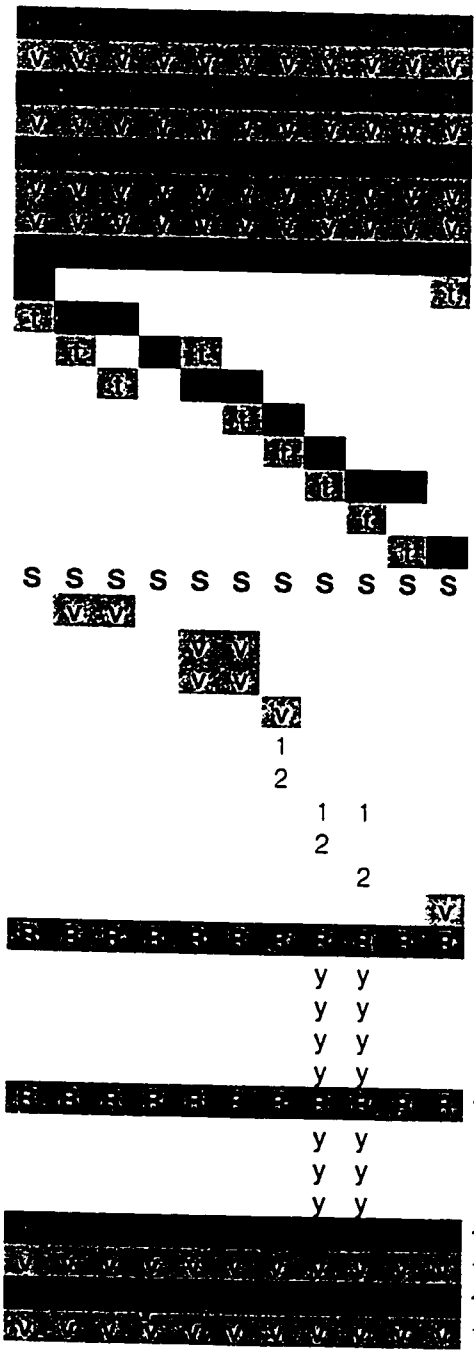
A-18 ICD-EIP CCCP Program level 2



A-19 Development Information Program Level 1

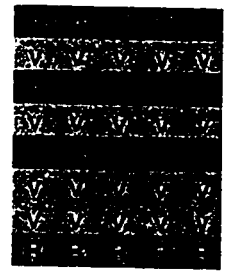


A-20 Development Information Program level 2



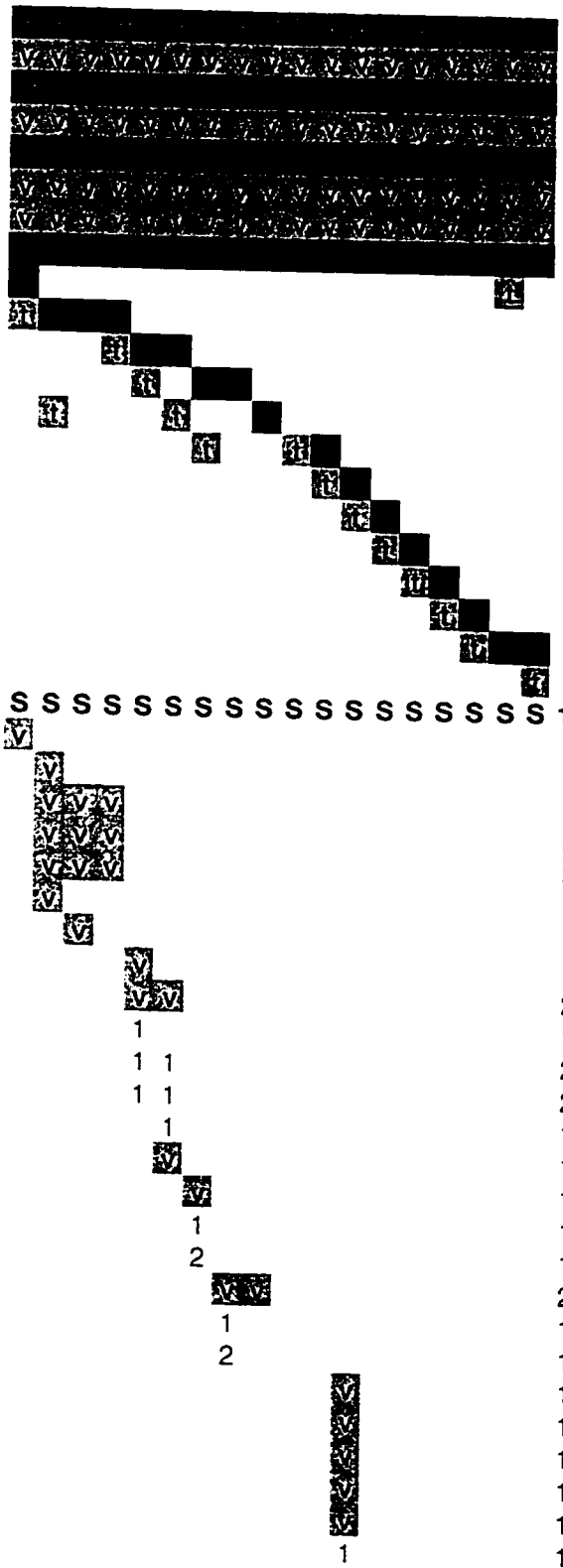
11	1	{Context View}
11		Project Workflows
11	1	{Branch}
11		3 Communications
11	2	{Program}
11		1- Development Information Program
11		Level#2
11	9	{Stage_rectangle}
2		Program/Project Proposal
3		Review of Submission
3		Submission Rejection/Resubmission Required
3		Committee Review
2		Approval
2		Monitoring/Reporting Payments
3		Assessment/Follow-up
1		Project Completion and Closure
2		Call for Proposals
11	10	{Activity}
2		Reviewed by: Communications Officer
2		Comprised of: CIDA representatives
2		Comprised of: Industry experts
1		Approval by Delegated Authorities
1		Contribution agreements * prepared and signed
1		Commitment entered in financial system
2		Update financial system
1		Interim payments
1		Final payments issued
1		At least one RFP is issued per year
11	4	{Tools}
2		Guidelines
2		Evaluation report
2		Interim activity reports
2		Interim financial reports
11	3	{Methods}
2		Financial review
2		Review of product
2		Review reports
11	1	{Content Source}
11		http://w3.acdi-cida.gc.ca/cida_ind.nsf/
11	1	{Author}
11		Syntax and Patterns © by W.M. Jaworski, 1988-2002

A-21 CIDA Roadmap -CEE Branch level 1

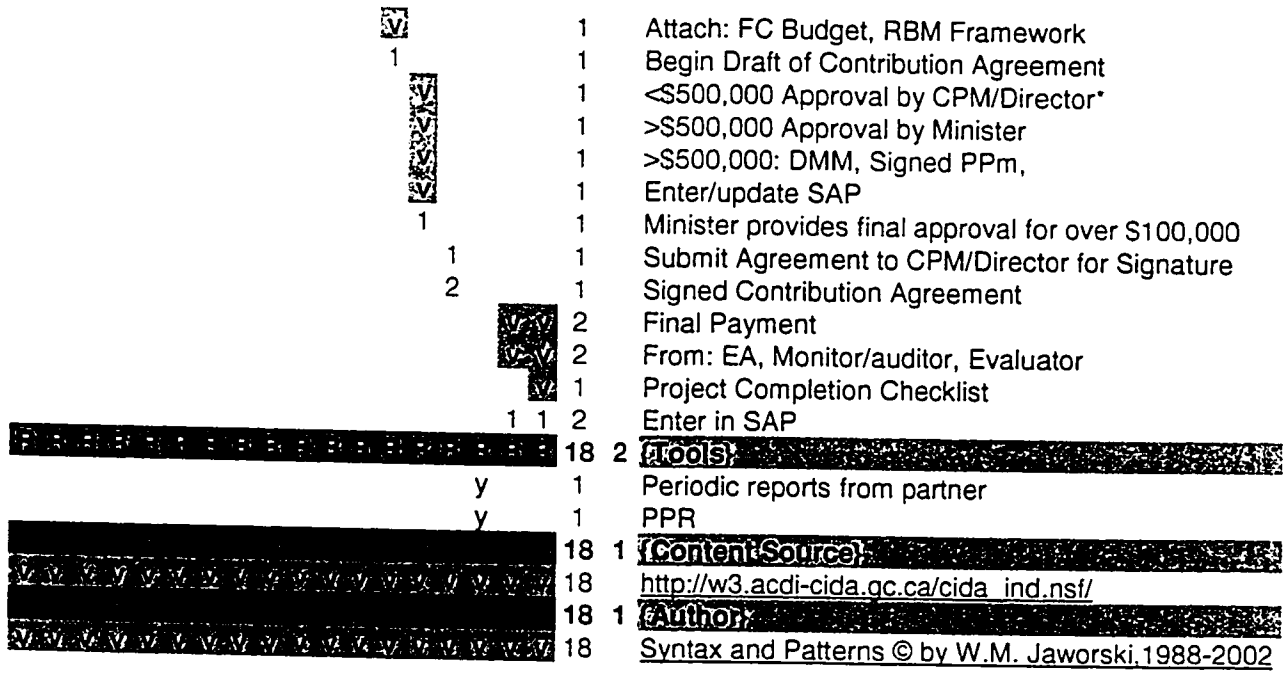


					5	1	{ContextView}
					5		Project Workflows
					5	1	{Branch}
					5		4 Central Eastern Europe (CEE)
					5	2	{Program}
					5		1 -CIDA Roadmap -CEE Branch
					5		Level#1
					5	6	{Requirements}
y	y				2		Canadian Company/Org.
y	y				2		Have an identified partner in a CEE country
y	y				2		Proposed project must: Support one or more CIT program priorities
y	y				2		Proposed project must: Conform to CEE country/program strategies
y	y				2		Proposed project must: Document conforms with CEE Guidelines
y	y				2		Proposed project must: Addresses CIDA's mandatory requirements
					5	4	{Super-Stage}
					5		Eligible Proponent
					2		ConceptPaper
					2		Initial Discussion
					1		Approval*
S	S	S	S	S	5	13	{Stage-rectangle}
			1		1		Initial Discussion
			2		1		Concept Paper
			3		1		Committee Review
			4		1		Approval to Proceed
			5		1		Submission Rejection
			6		1		Detailed Proposal
			7		1		Validation and Negotiations
			8		1		Prepare PAD
			9		1		Approval*
			10		1		Complete Contribution Agreement/Administrative Arrangement
			11		1		Monitoring
			12		1		Final Reports
			13		1		Project Completion and Closure
S	S	S	S	S	5	2	{Activity}
					1		Guide for Preparing an Unsolicited Proposal
					1		Acknowledgement letter
					5	1	{Content-Source}
					5		http://w3.acdi-cida.gc.ca/cida_ind.nsf/
					5	1	{Author}
					5		Syntax and Patterns © by W.M. Jaworski, 1988-2002

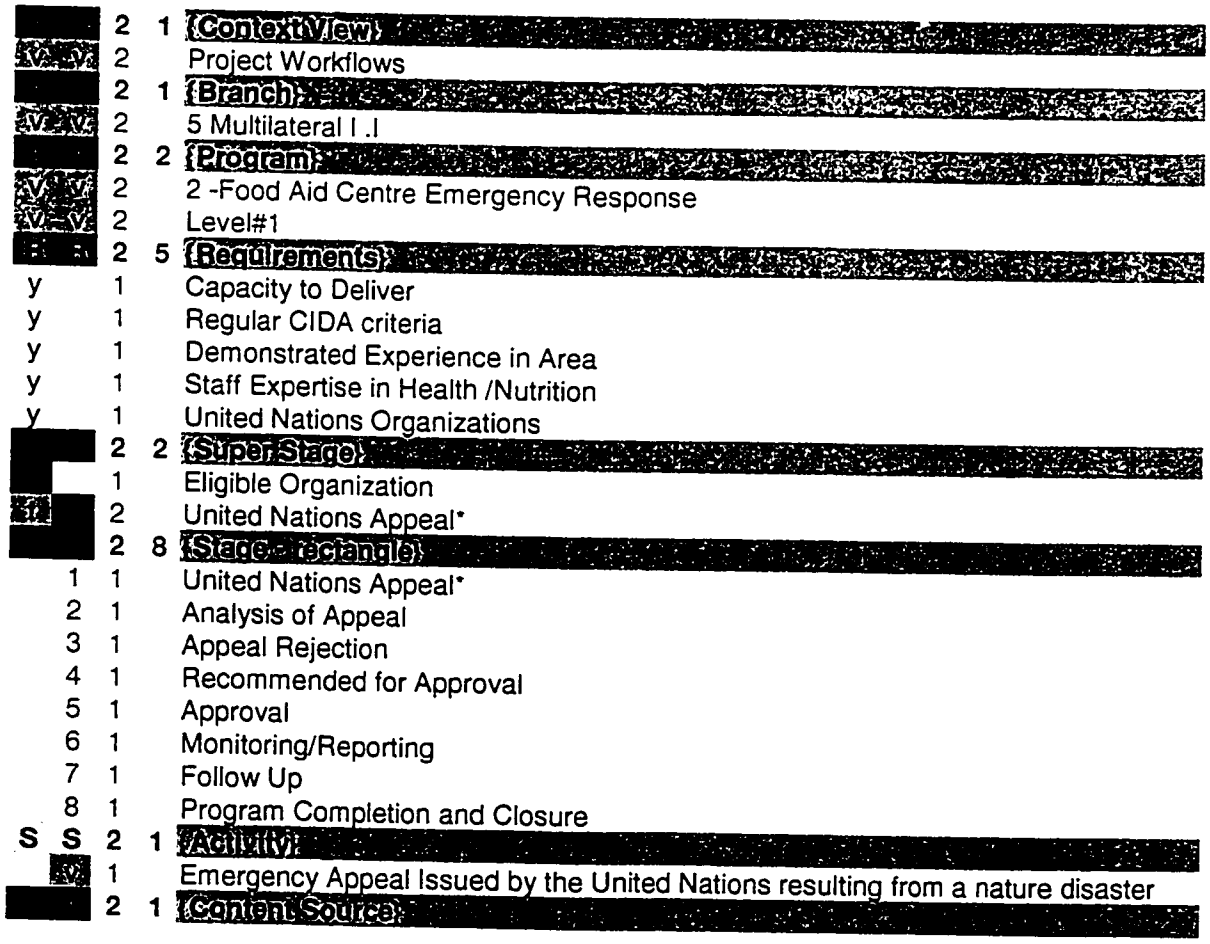
A-22 CIDA Roadmap -CEE Branch level 2

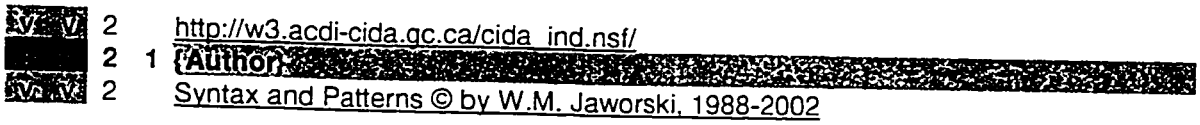


18	1	{Context View}
18		Project Workflows
18	1	{Branch}
18		4 Central Eastern Europe (CEE)
18	2	{Program}
18		1 -CIDA Roadmap -CEE Branch
18		Level#2
18	13	{Stage - rectangle}
2		Initial Discussion
4		Concept Paper
3		Committee Review
3		Approval to Proceed
3		Submission Rejection
3		Detailed Proposal
2		Validation and Negotiations
2		Prepare PAD
2		Approval*
2		Complete Contribution Agreement
2		Monitoring
3		Final Reports
1		Project Completion and Closure
18	39	{Activity}
1		Ad hoc
1		Copies may be sent to policy specialists, if warranted
3		FRAU (if necessary)
3		Initial project assessment by project team
3		Open file in SAP and RMU
1		Reviewed by Project Officer
1		Request additional info.
1		Reviewed by: CPM, Director, VP
2		Submission added to agenda of weekly NGO Mgmt
1		<$500,000 PPM
2		Approval Document—Current Partners/New partners
2		Proposal Analysis –New Partners
1		>$500,000 Memorandum to Proceed
1		Reviewed by: CPM, PRC, VP, Minister
1		Approval by Delegated Authorities
1		Grant agreements* prepared and signed
1		Commitment entered in financial system
2		Inform Project Proponent
1		Update financial system
1		Issue Interim/final payments
1		Consultations with peers
1		Cost sharing defined
1		Define proponent's level of effort
1		Environmental assessment
1		Prepare RBM framework
1		Draft DMM

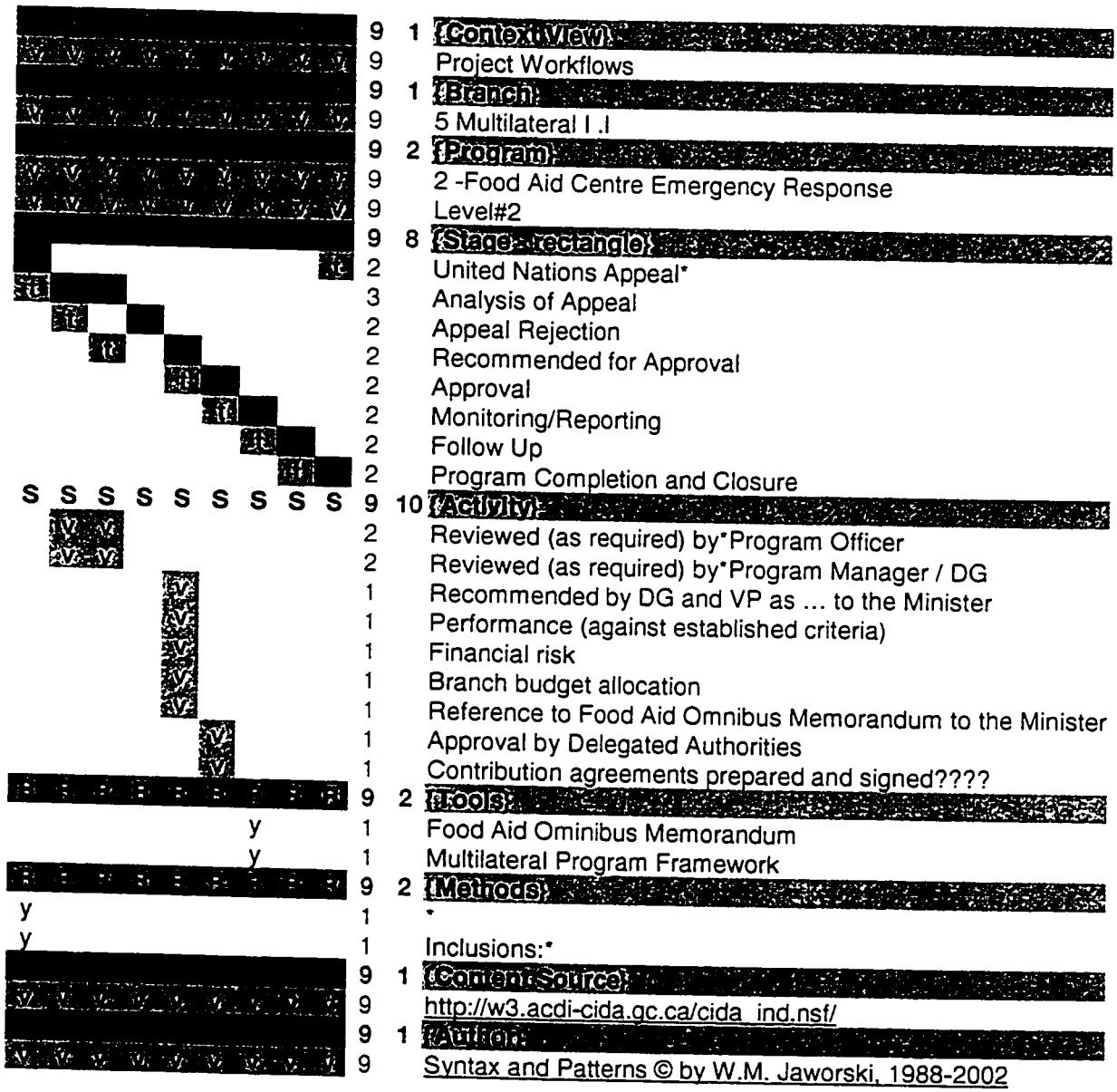


A-23 Food Aid Centre Emergency Response level 1

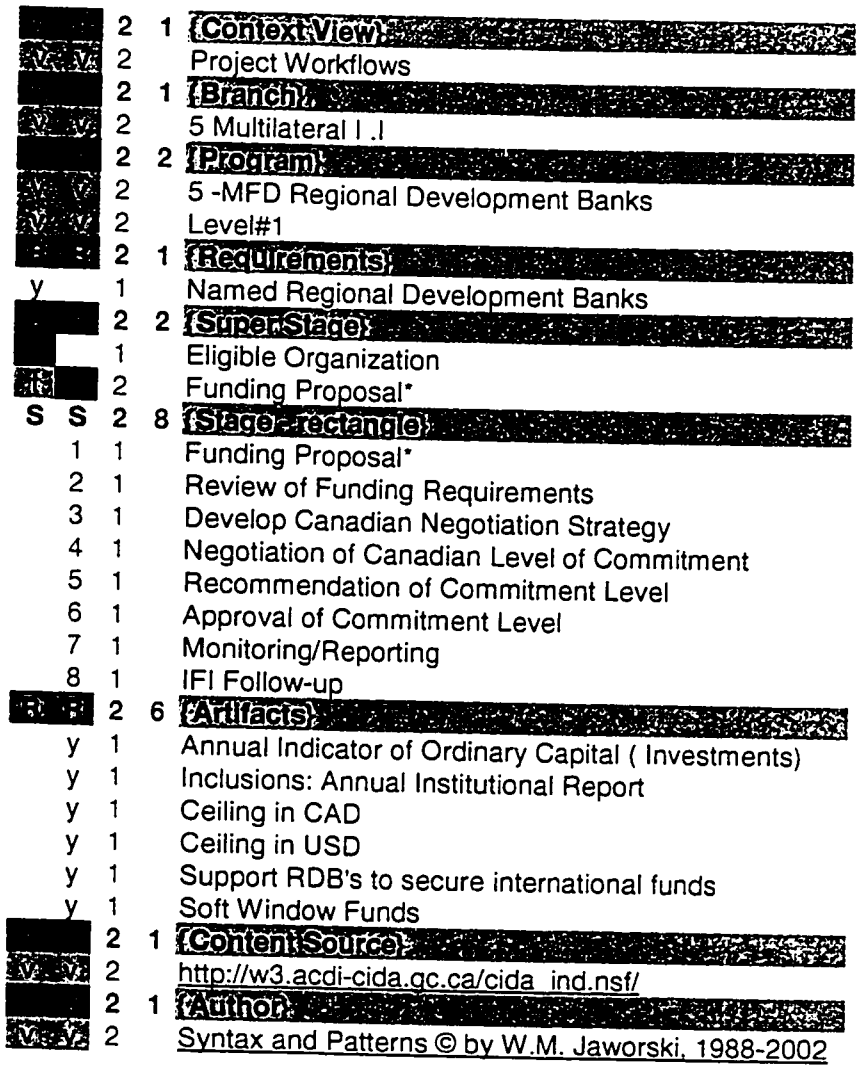




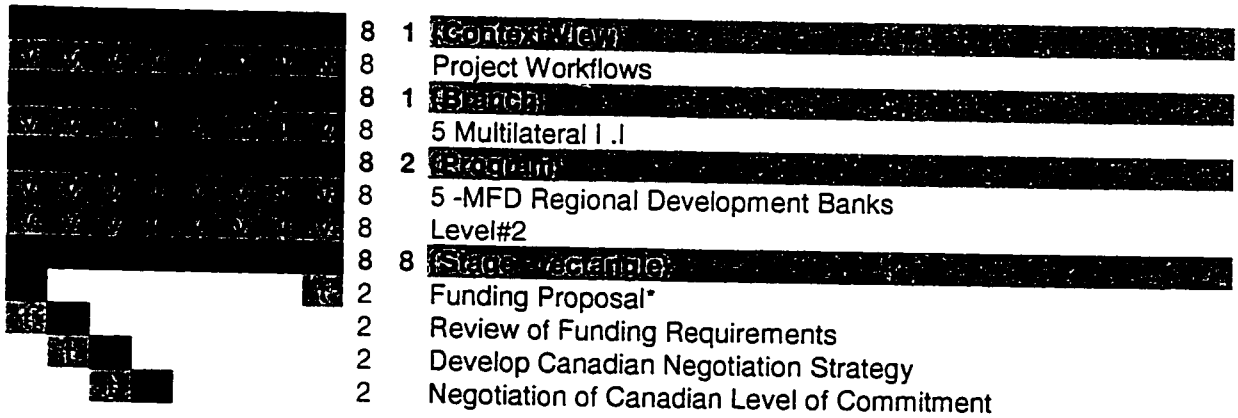
A-24 Food Aid Centre Emergency Response level 2

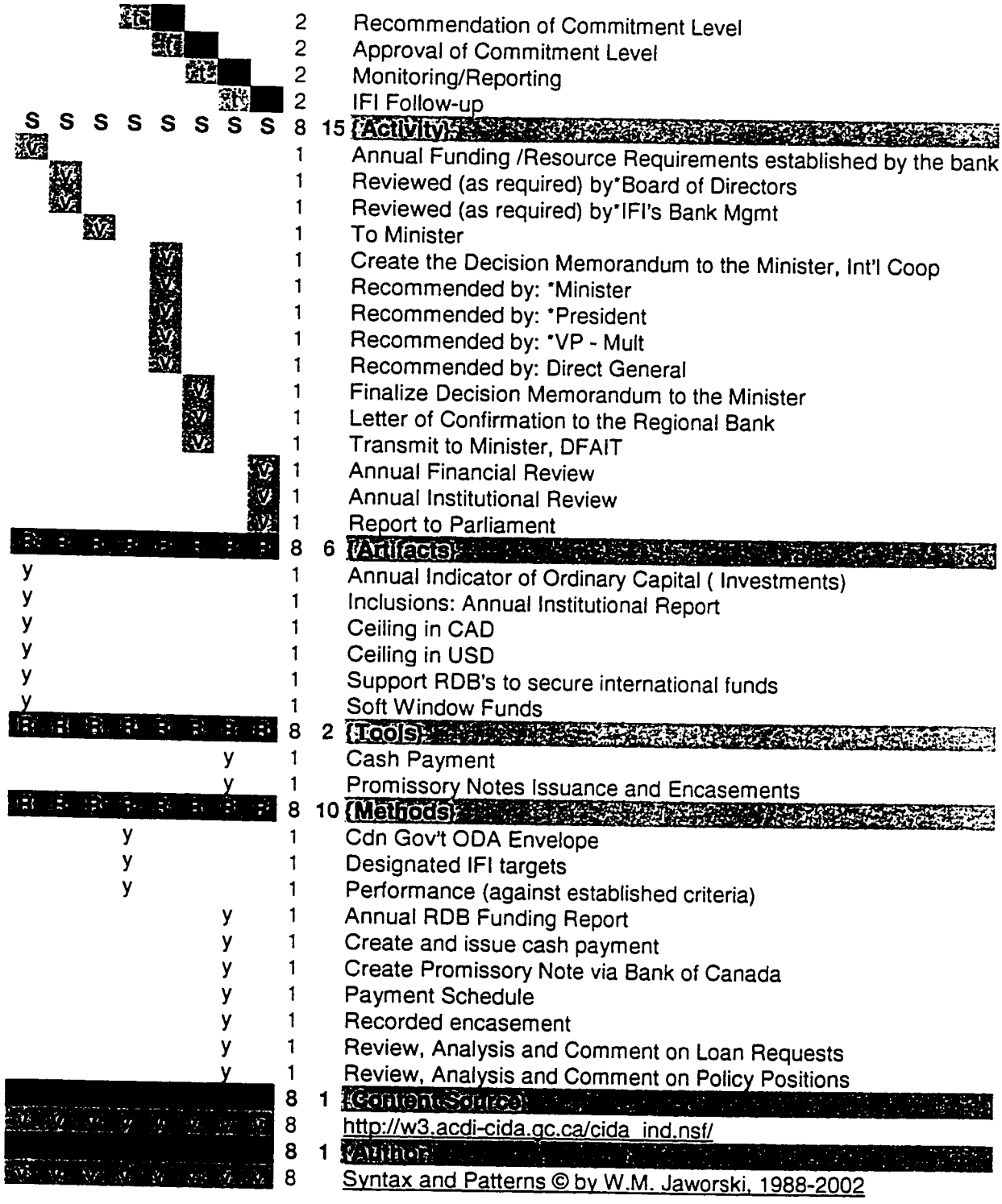


A-25 MFD Regional Development Banks level 1



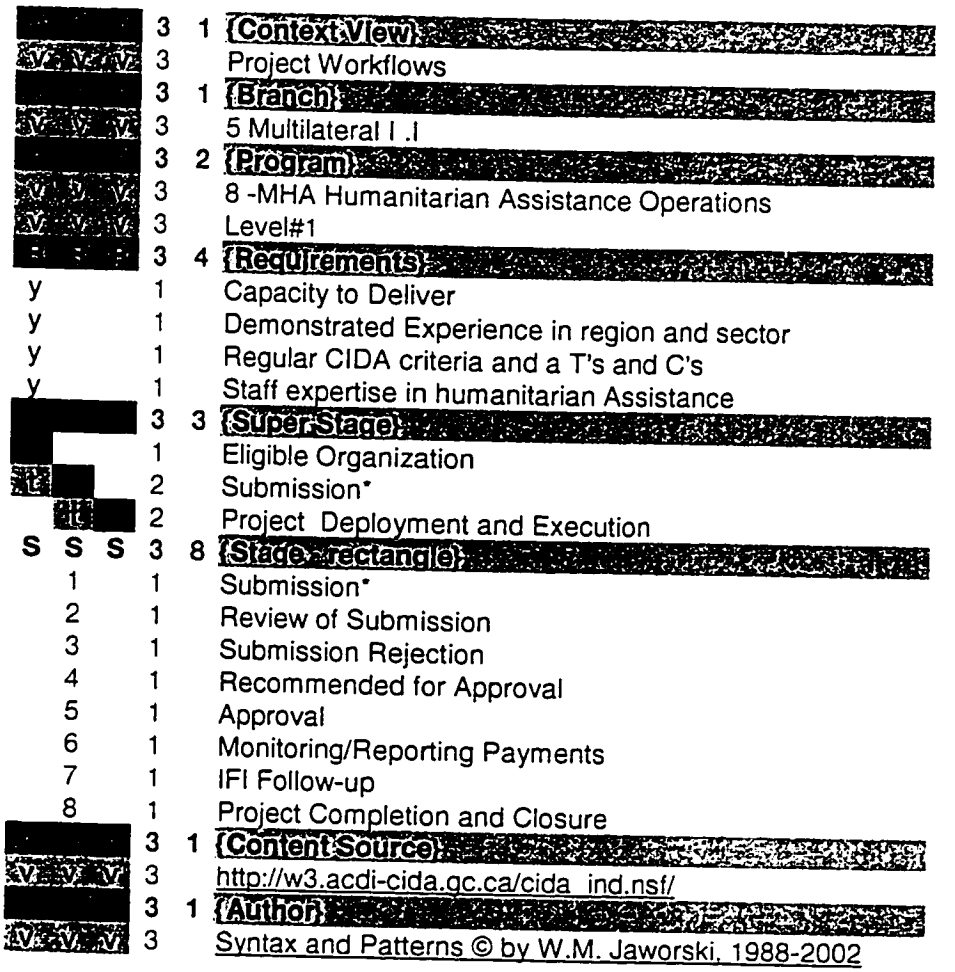
A-26 MFD Regional Development Banks level 2



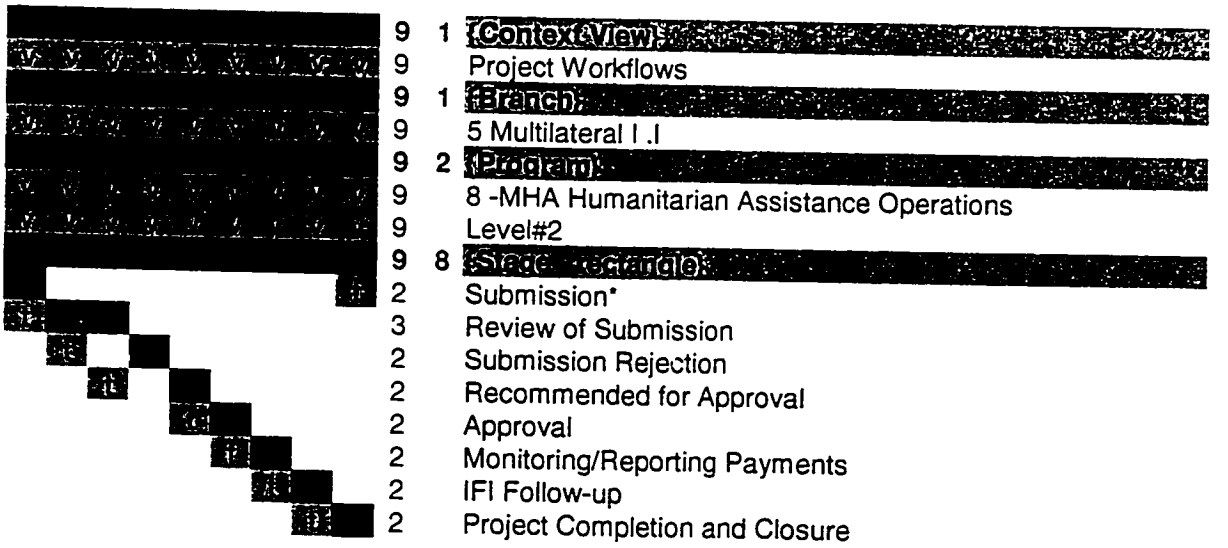


	2		Recommendation of Commitment Level
	2		Approval of Commitment Level
	2		Monitoring/Reporting
	2		IFI Follow-up
S S S S S S S S	8	15	{Activity}
	1		Annual Funding /Resource Requirements established by the bank
	1		Reviewed (as required) by*Board of Directors
	1		Reviewed (as required) by*IFI's Bank Mgmt
	1		To Minister
	1		Create the Decision Memorandum to the Minister, Int'l Coop
	1		Recommended by: *Minister
	1		Recommended by: *President
	1		Recommended by: *VP - Mult
	1		Recommended by: Direct General
	1		Finalize Decision Memorandum to the Minister
	1		Letter of Confirmation to the Regional Bank
	1		Transmit to Minister, DFAIT
	1		Annual Financial Review
	1		Annual Institutional Review
	1		Report to Parliament
	8	6	{Artifacts}
y	1		Annual Indicator of Ordinary Capital (Investments)
y	1		Inclusions: Annual Institutional Report
y	1		Ceiling in CAD
y	1		Ceiling in USD
y	1		Support RDB's to secure international funds
y	1		Soft Window Funds
	8	2	{Tools}
y	1		Cash Payment
y	1		Promissory Notes Issuance and Encasements
	8	10	{Methods}
y	1		Cdn Gov't ODA Envelope
y	1		Designated IFI targets
y	1		Performance (against established criteria)
y	1		Annual RDB Funding Report
y	1		Create and issue cash payment
y	1		Create Promissory Note via Bank of Canada
y	1		Payment Schedule
y	1		Recorded encasement
y	1		Review, Analysis and Comment on Loan Requests
y	1		Review, Analysis and Comment on Policy Positions
	8	1	{Content Source}
	8		http://w3.acdi-cida.gc.ca/cida_ind.nsf/
	8	1	{Author}
	8		Syntax and Patterns © by W.M. Jaworski, 1988-2002

A-27 MHA Humanitarian Assistance Operations level 1



A-28 MHA Humanitarian Assistance Operations level 2



S S S S S S S S S	9	12	{Activity}	
	2		Reviewed (as required) by Program Manager	
	2		Reviewed (as required) by Technical Specialists	
	1		Multi-year allocations consider: Financial risk	
	1		Multi-year allocations consider: Performance	
	1		Multi-year allocations consider: Branch budget allocation	
	1		Multi-year allocations consider: Designated IFI targets	
	1		Recommended by ??	
	1		Contribution agreements prepared and signed????	
	1		Approval by Delegated Authorities	
	1		Based on recommendations	
	1		Made in Institutional Assessment	
	1		Through an Action Plan	
	9	5	{Tools}	
y	1		ARLU	
y	1		Program Framework	
y	1		Guidelines and TORs for institutional evaluation (1994)	
y	1		Department of Finance	
y	1		Institutional evaluation (when required)	
	9	10	{Methods}	
y	1		Annual audited financial statements	
y	1		Annual financial risk assessment	
y	1		Annual PPR	
y	1		Annual Report	
y	1		Create Promissory Note	
y	1		Field Mission (CIDA officer)	
y	1		Occasional financial audit	
y	1		Program Evaluation (triennial)	
y	1		Record encashment	
y	1		Semi or Annual Narrative Report	
	9	1	{Content Source}	
	9		http://w3.acdi-cida.gc.ca/cida_ind.nsf/	
	9	1	{Author}	
	9		Syntax and Patterns © by W.M. Jaworski, 1988-2002	

---------End of Appendix--------