
***CS 501- Software Engineering
Legal Data Markup Software
Release (V.1.0)
Feasibility Report***

Version (1.1)

Key Stakeholders/Organizations:

Project Sponsors: *Professor Thomas Bruce, Professor William Arms*

Document Change History Log

Version #	Change Request #	Description of changes to this document	Date Approved	Section(s) of Project Plan affected.
1.00	0	Initial Version	09/13/2000	All
1.1	1	Revision for Delivery	11/27/2000	1.1, 5, 6, 8, 9

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1 INTRODUCTION

1.1 PROJECT OVERVIEW

Cornell's Legal Information Institute (LII) currently has software that converts the US Code from formatted ASCII input provided by the US House of Representatives into HTML. However, this software does not handle some of the features very well and as desired, cannot convert the "raw" input into XML. Professor Bill Arms was contacted by the LII to help in the implementation of this technical aspect. Consequently, this proposal was suggested as one of the projects for the Software Engineering course, CS 501.

The objective of the Legal Data Markup Software project is to create a filter that will reliably and accurately create a structured XML version of the US Code from formatted ASCII input provided by the US House of Representatives. The XML version will follow a DTD that we will create. The design should be done in such a way as to guarantee (so far as is possible) a usable lifespan of three or more years for the software.

The software will be used by Professor Thomas Bruce, the cron daemon, and the American people. This filter will be run in an automated batch-processing environment. Therefore, Professor Bruce will sign off on this project, the cron daemon will interact with the software at run time, and the American people will be the ultimate users of the product created by the software.

The LII will use the software to create a variety of electronic publications: one is their Web version of the Code. Others contemplated include downloadable versions of the Code in Folio Views format or formats readable on PDAs. These will make use of the XML version created by our software, and further transform it.

The project was initiated by Professor Thomas Bruce.

1.2 PROJECT SCOPE

- *Required:* The project will provide software that will convert the US House of Representatives Code in raw ASCII format into XML format for use by Cornell's Legal Information Institute. The XML output will preserve the layout and structural division of the US Code.
- *Desired:* Additional goals of the project include enabling point in time references and marking up detailed tables to increase the utility of the XML output.

1.3 REFERENCES

The following documents are related to the project and have been consulted:

- Current version of code for conversion from raw ASCII to HTML.
- <http://uscode.house.gov/download.htm> – US Code related input formats.
- <http://www.lexum.umontreal.ca/fr/equipes/technologie/dtd/LOIQ.dtd> -- Montreal's DTDs used for legislative purposes.
- <http://elj.warwick.ac.uk/jilt/00-2/bruce.html> – General background on legislative and legal publishing.
- <http://elj.warwick.ac.uk/jilt/00-1/arnold.html> – History, motivation, and high-level implementation of EnAct, a project done in Tasmania similar to this one.

1.4 PRODUCT/PROJECT or BUSINESS DEPENDANCIES

This project is not dependent on any other project. The LII intends to use the software to publish US Code in HTML format on their website and store the XML format for later use.

1.5 ROLES AND RESPONSIBILITIES

Name	Department	Responsibility
Thomas Bruce	Legal Information Institute	Project Sponsor
William Arms	Computer Science Department	Project Sponsor
Amy Siu	Computer Science Department	Project Reviewer
Ju Joh	Computer Science Department	Student Developer
Sylvia Kwakye	Computer Science Department	Student Developer
Jason Lee	Computer Science Department	Student Developer
Nidhi Loyalka	Computer Science Department	Student Developer
Omar Mehmood	Computer Science Department	Student Developer
Charles Shagong	Computer Science Department	Student Developer
Brian Williams	Computer Science Department	Student Developer

2 Software Development Plan

2.1 ASSUMPTIONS

- Given that the project is part of a course requirement, it is assumed that adequate funding is provided.
- There exists sufficient time to complete the project.
- Since there is no involvement of trade secrets or other proprietary information, no non-disclosure agreements must be signed.

2.2 GROUP DEPENDENCIES

The project does not depend on any other group because our group is solely developing it.

2.3 CONSTRAINTS

- The project must be completed by the end of the semester. It must include operational system, appropriate documentation, and a final presentation. Due to this time constraint, it may not be possible to complete the extra desired functionality.
- Particular team members need to be trained in the programming languages and environments chosen.
- Scheduling conflicts between the clients and team members may lead to difficulties.

2.4 RISK IDENTIFICATION

- The organizational structure and format of the raw ASCII of the US Code vary from title to title and revision to revision. Thus, we require a strong understanding of the input and a comprehensive system design. We can minimize problems by using a visible software process and intermediate deliverables.
- The maintenance of the software after delivery will require clear extensive documentation at the source level.

2.5 ESTIMATES

2.5.1 EFFORT

A team of seven students, within a three-month time frame, will develop the software.

2.5.2 COSTS

Since the project is being pursued as a course assignment, the main costs associated with it are training materials and computing resources.

2.5.3 SIZE OF DELIVERABLES

The preliminary estimates include:

- 5000 lines of source code.
- 30-50 pages of user documentation.
- 30-50 pages of reports.
- 1000 lines of DTD.

2.5.4 SIZE OF NON-DELIVERABLES

The preliminary estimates include:

- 4-5 prototypes, each averaging 2000-3000 lines of source code.
- 30-50 lines of test data.

2.6 PROJECT PLAN DELIVERABLES

- Feasibility report
- Project schedule
- Requirements document
- Design document
- Legal Data Markup Software

2.7 PROJECT LIFE-CYCLE

The Iterative Refinement method will be used. An initial implementation will be created for user comment and this will be followed by repetitive refinement of requirements, design, and the prototype until the system is complete.

2.8 PROJECT SCHEDULE(s)

2.8.1 PROJECT ACTIVITIES

The group has scheduled weekly meetings with the client, Thomas Bruce, on Wednesdays from 6:00PM to 7:00PM. Immediately following this client meeting, there will be regular group meetings to discuss questions and concerns with the project development.

2.8.2 SCHEDULES AND MILESTONES

The following is our current schedule:

- 9-13-2000 -- Feasibility study and plan will be delivered.
- 10-4-2000 -- Project requirements will be delivered.
- 11-8-2000 -- Project design will be presented.
- 11-29-2000 -- Project implementation will be presented.

A detailed baseline schedule with all the tasks clearly defined will be updated as the project progresses.

3 CRITICAL COMPUTER RESOURCES

The software will be developed in a Linux environment with Perl and XML being the primary languages. The LII has provided leda.law.cornell.edu, a Red Hat Linux machine, for use in the project.

The following is the priority for Cornell University laptops:

1. Brian Williams, bww3
2. Sylvia Kwakye, sbk22
3. Omar Mehmood, om14
4. Ju Joh, jhj4

We also require an extra wireless LAN card for Jason Lee, jcl53.

4 FACILITIES AND TOOLS

The client has provided the following facilities and tools for project development:

- Red Hat Linux server, leda.law.cornell.edu, which will be used for project development and as a web server containing all project related materials and documents.
- A web board, http://obiwan.law.cornell.edu:8080/~lii_workgroups/, which will be used to communicate with the client.

5 SOFTWARE CONFIGURATION MANAGEMENT PLAN

Jason Lee will become the system administrator for leda.law.cornell.edu

6 SOFTWARE QUALITY ASSURANCE PLAN

The Design Document will address coding conventions.

7 COMMUNICATION PLAN

The entire project status will be communicated to:

- Professor William Arms
- Professor Thomas Bruce
- Project TA
- Project team members

8 TEST PLAN

Preliminary prototypes will be run on actual data, with the output being checked manually.

9 END USER SUPPORT PLAN

A software man page will be created for general use. A Program Design Document and DTD Design Document will be made for updaters and developers.

10 SOFTWARE PROJECT TRACKING & OVERSIGHT

The following tracking methods will be used to monitor the project status:

- Weekly group and client meetings.
- Continual update to the Feasibility Report, Requirements and Design Documents.
- A project web site with an online copy of all project-related materials for reference.
- One or two team members will head each major milestone.

11 APPROVALS

The Project Plan will require the approval of Professors William Arms and Professor Thomas Bruce before the project is committed. The project has been pre-approved.

APPENDIX 1: DEFINITIONS

ACRONYM	DEFINITION
DTD	Document Type Definition
LII	Legal Information Institute
XML	Extensible Markup Language