**Team Cursor**

**Encryption**

**Software Project Plan**

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*Version 1*

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| *Plan Version* | *Date* | *Authors* | *Comment* |
| 1.0 | 3.28.2014 | Ricky Bifford | Sections 5 & 6 |
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# Introduction

This document is designed to provide software identification, scope, primary objectives and test plan schedule to be adopted during the development of the Team Cursor File Encryption Software. The goal of this document is to provide a framework that can be used by managers and developers to successfully test, plan, and implement the necessary software development processes in a timely and cost-effective manner.

This document applies to the development of a File Encryption Program - Version [1.0], which allows a user to select a file, and encrypt it, via a user-generated key. They key and text file will be stored for future retrieval.

Software Requirements for this program are as follows: Operating System : Windows 2000/xp and Jdk 1.5.0. Hardware requirements for this program are as follows: Processor : Pentium III/AMD Athlone XP, RAM : 128 MB, Hard disk : 20 GB, FDD : 1.44MB, Monitor : 14 inch, Mouse : 3 Button scroll, CD Drive : 52 X, and Keyboard : 108 keys .

The Team Cursor software development team will design and implement a data encryption software that is capable of encrypting a file for secure transmission. The schedule timeline for software planning is 3 weeks. Software development, testing and deployment for this project is scheduled for 5 weeks.

## Identification

This document applies to the software development effort in support of the development of Team Cursor File Encryption Version 1.0. A detailed development timeline in support of this effort is provided in the supporting project Master Schedule.

## Scope

File Encryption Program was developed by Team Cursor (TC) for all users who wish to protect their data. Such data is protected by using a program that protects information using mathematical algorithms. The resulting data is unintelligible, and therefore, unable to be read. This intermediate form of data, cipher text, will then be able to be transported over insecure networks. Anyone that intercepts such will be unable to read the data in its current state. Once the information reaches its destination, the intended reader can decrypt the data back to its original state.

File encryption deals largely with Key Management. The success of this program relies heavily on the safe management of keys used to encrypt and decrypt data. Key management concerns keys at the user level, either between users or systems. It is also important to note that Key Management includes the exchange, storage, use, and replacement of keys.

To access the program, it must be downloaded via the WebTycho portal. In order to access this site, you will need both log-in credentials and the serial number associated with your purchase of our software. Once downloaded, the software will need to be activated. The activation code can be found in a zip file given at the time of purchase. Customers with valid maintenance contracts may access the FEP site to download the latest versions of software. To use the site, you will need the serial number of your product.

The project sponsor, acquirer, and developer fall under the Cursor Team. Members of this team include the following: Ricky Bifford, Kurt Carico, Andrew Castillo, and Jordan Kovacs. The planned operating site can be found within the WebTycho portal at http://www.UMUC.edu/myumuc.

In conjunction with this program, other forms of software, such as our stenography tool, can be used as well. All of our products can be found through the WebTycho portal.

## Document Overview

The purpose of the File Encryption Program - Software Development Plan (SDP) is to guide Team Cursor project management during the development of File Encryption Program. Software Quality Assurance (SQA) procedures are captured in Appendix A of the SDP. Appendix B is used to document Software Configuration Management (SCM) activities where these activities deviate from Team Cursor SCM Plan. Requirements for the project will be captured in the Team Cursor Software Requirements Specification (SRS). This plan will be placed under configuration management controls according to the Team Cursor Software Configuration Management Plan. Updates to this plan will be handled according to relevant SCM procedures and reviews as described in the Team Cursor Software Quality Assurance Plan.

## Relationship to Other Plans

There are several other Team Cursor documents which support the information contained within this plan. These documents include: Team Cursor Software Configuration Management Plan, Team Cursor Software Quality Assurance Plan, and Team Cursor Metrics and Measurement Plan. Team Cursor project specific documentation relating to this plan include: Team Cursor Software Requirements Specifications and Team Cursor Master Schedule. This plan has been developed in accordance with Team Cursor software development processes, policies, and procedures.

# Acronyms and Definitions

## Definitions

|  |  |
| --- | --- |
| Algorithm  Cipher Text  Decrypt  Encrypt  Key Management  Stenography  WebTycho  Zip File | A process to be followed in problem-solving operations.  The result of encryption performed on plaintext.  To make a coded message intelligible.  To convert data into a cipher or code.  The management of keys used in encryption and decryption.  The action or process of writing in shorthand or taking dictation.  A portal within the UMUC website.  A computer file whose contents of one or more files are compressed for storage or transmission, often carrying the extension |

## Acronyms and Abbreviations

|  |  |
| --- | --- |
| FEP  KM  SCM  SDP  SQA  SRS  TC | File Encryption Program  Key Management  Software Configuration Management  Software Development Plan  Software Quality Assurance  Software Requirements Specification  Team Cursor |

# References

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# Overview

The final deliverable program will provide the following capabilities: encryption key creation, storage, and management, file encryption/decryption, and text file storage. The program shall be delivered in its one final version by midnight May 11th 2014 within the collaborative documents sections of the Team Cursor study group portal.

The Team Cursor project start date is 30 March 2014 with a target completion date of 11 May 2014. The final delivery date is 11 May 2014 based on the CMSC 495 course syllabus schedule and is subject to modifications based on professor’s requests and announcements. There are no preliminary requests for draft versions of the Team Cursor project at this time.

The Team Cursor project will be installed directly on WebTycho upon completion and will require a download in order to run it properly. A “ReadMe” file will be provided along with the encryption program, detailing the manner in which a user should operate the software.

Team Cursor members shall be available for any follow up inquiries the professor may have upon delivery of the final encryption program.

## Relationships

A Java-based graphic user interface will be developed in order to serve as the main gateway for user input and program feedback. The GUI shall have buttons and fields for entering and storing a password key. The GUI shall provide the option to select a text file to encrypt and then subsequently decrypt.

Team Cursor’s program make use of either the Eclipse or Netbeans IDE in order to compile and test the interface functionality. The development efforts will be primarily focused on interfaces that operate on either the latest versions of Window OS or IOS.

## Source Code

The source code will be developed using Java SE 8 and delivered to Professor Wireman as one single file.

## Documentation

Ongoing communications and team member contributions to the development processes of the Team Cursor program shall be documented and stored within individual Google emails, GitHub repository, and each members own personal computer files. These however, are not considered formal documentations to be presented as part of the final Team Cursor project submission.

Formal documentation shall be provided within the source code as indicated in the project description of course 495. Additional documentation of all major developments and milestones shall be kept within the Team Cursor study group portal on WebTycho.

Additionally, a formal documentation will be presented to the professor in the form of a ReadMe file, which will contain a summation of the proper workings of the Team Cursor encryption and key management program.

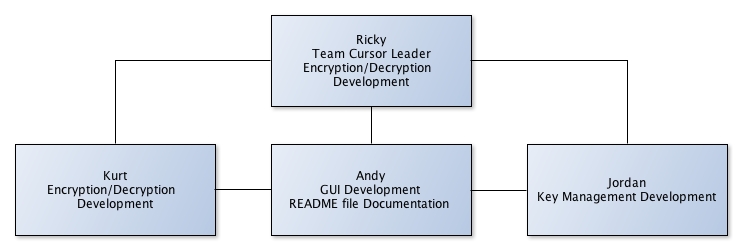
## Project Resources

Team Cursor’s approach to developing and implementing an encryption and key management program is to partition the project into three major components. The first is to develop a GUI that allows the user to input a key, select a text file to encrypt/decrypt, and then subsequently use the same key to open the original text file unencrypted.

The second aspect of the development process is to develop encryption and decryption capabilities using Java SE 8 code, and testing it’s functioning separately before incorporating it with the GUI.

The third aspect of the development process is to develop a key management strategy using Java SE 8, that shall allow a user to select his/her own key for both encrypting and decrypting a selected file.

All TC members shall work the previously described tasks separately but simultaneous timetable. Team Cursor members will begin the coding separate module in order merge all the coded sections two weeks prior to the 11 May 2013 official deliverable due date.



## Project Constraints

The Team Cursor encryption and key management program shall be based on approval and feedback provided by UMUC Professor Mark Wireman. The time constraints are limited to six-week total, as the project must be completed by 11 May 2014.

The TC team leader shall be responsible for keeping the project on time and on task. All member contributions shall not diverge from the primary scope and objectives stated in section 1.

There are no parent organizations but the development quality and standards that Team Cursor will impose on our project are based on UMUC student policy, Professor Wireman requirements, and IEEE standards.

Each team member is assigned a specific coding, documentation, and development workload. However, there will be a need to maintain constant communication with other team members in order to coordinate the final product assembly efficiently.

Timelines and other deadlines shall be decided by all team members, however if there disagreement, the team leader shall determine all necessary and mandatory time constraints.

The distribution and estimation of coding and testing hours is as follows:

Ricky Bifford: 35-40 hours

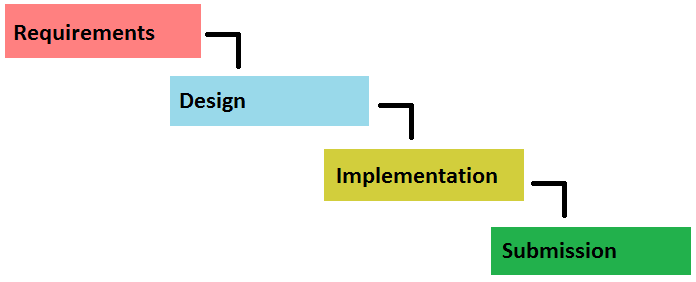
Kurt Carico: 35-40 hours

Andy Castillo: 35-40 hours

Jordan Kovacs: 35-40 hours

# Software Process

## Software Development Process

**

### Life Cycle Model

During the Requirements phase, all group members will be responsible for providing input to help establish well defined software requirements.

During the Design phase, all group members will be responsible for providing input to develop a reliable product.

During the Implementation phase, each group member will have assigned specific portions of the program that they will be responsible for completing within the allotted time. Please refer to *WebTycho > CMSC495 Section 7981 Semester 1402 > Study Groups > Collaborative Docs > Software Code Assignments* for an up-to-date list of assigned responsibilities.

The Submission phase will require all group members to ensure they have all of the required documentation and that it is properly submitted by the project due date of 5/11/2014.

## Software Engineering Activities

### Handling of Critical Requirements

Please refer to *WebTycho > CMSC495 Section 7981 Semester 1402 > Study Groups > Collaborative Docs > Software Requirements*. As software requirements will be listed there, as they are established.

### Recording Rationale

Please refer to *WebTycho > CMSC495 Section 7981 Semester 1402 > Study Groups > Collaborative Docs > Software Design*. All software design decisions agreed on by the group will be posted there for reference.

### Computer Hardware Resource Utilization

All group members are responsible for providing their own software development environment. However, if difficulties arise assistance can be requested from other group members.

### Reusable Software

Please refer to *WebTycho > CMSC495 Section 7981 Semester 1402 > Study Groups > Collaborative Docs > Reusable Software*. Group members will post any code they believe is reusable to that space.

### Software Testing

Please refer to *WebTycho > CMSC495 Section 7981 Semester 1402 > Study Groups > Collaborative Docs > Software Testing.* Methods for testing this project will be developed and posted in that location.

# Schedule

Appendix A Software Quality Assurance

The Software Quality Assurance (SQA) process is divided up into several interdependent processes. Roles and responsibilities for SQA are detailed below

Software Quality Assurance Evaluation

|  |  |  |
| --- | --- | --- |
| Project | Members | Roles |
| SQA Evaluations | Team Cursor – UI Team | Stress Testing, User Acceptance |
| SQA Records | Team Cursor – Certifications and Testing | Working Documents, Software Documentation |
| Independence in SQA | Team Cursor – Certifications and Testing |  |
| Corrective Actions | Team Cursor – Software Development Team | Error Checking |
|  | All | Scheduled Meetings, software research |

Refer to the TC Software Quality Assurance Plan for all applicable processes and procedures.

Appendix B Software Configuration Management

Software Configuration Management (SCM):

|  |  |  |
| --- | --- | --- |
| Project | Members | Roles |
| Configuration Identification | Team Cursor – Software Deployment Team | Software releases, updates |
| Configuration Control | Team Cursor – Software Deployment Team | Hardware acquisition, installation, software implementation |
| Configuration Status Accounting | Team Cursor – Software Deployment Team | Local configuration records |
| Configuration Audits | Team Cursor – Software Deployment Team | Software log checks, error reporting |
| Packaging, storage, handling, and delivery | Team Cursor – Software Deployment Team | Software/Hardware set-up, installation, and delivery |

Refer to the TC Software Configuration Management Plan for all applicable processes and procedures.