

# **Project Option: Requirements and Guidelines**

## **UALR Master of Science in Information Quality**

### **MSIQ Project Option**

Student pursuing the MS in Information Quality have the option to complete the program requirement by thesis or by project. This document outlines the requirements and guidelines for students electing to complete their program using the Project Option.

#### ***Purpose***

Information Quality is a service science. Accordingly, students seeking the Master of Science in Information Quality must, under faculty supervision, conduct directed research on a particular problem or area of information quality and will produce reports and other deliverables appropriate to the project.

#### ***Curriculum Requirements***

Students electing to complete the MSIQ program through the project option can meet the 6-hour project requirements in one of three different paths - by successfully completing

1. The 6-hour course INFQ 7686, Graduate Project
2. The 3-hour course INFQ 7386, Graduate Project, in two successive semesters
3. The 3-hour course INFQ 7386, Graduate Project, and the 3-hour course INFQ 7391, Cooperative Education in Information Quality. In this path, these two courses can be taken in the same semester or different semesters in any order.

### **Qualifications**

#### ***Student Qualification***

Students seeking permission to begin project works must

- Be in good standing in the MSIQ program
- Have completed at least 12 hours of the MSIQ program requirements including INFQ 7303, Principles of Information Quality, INFQ 7342, Information Quality Tools; and either INFQ 7353, Case Studies for Information Quality; INFQ 7367, Information Quality Policy and Strategy; or INFQ 7337, Project and Change Management. Exceptions may be granted for students who have had substantial professional experience related to information quality management.

#### ***Faculty Advisor, Project Sponsor, Project Supervisor***

In addition to meeting minimum qualifications to begin project work, the student must also identify the following

- A member of the MSIQ faculty who has agreed to be project advisor.
- An organization external to the UALR Department of Information Science that has agreed to sponsor the project, and a member of that organization who has agreed to supervise the student's project

Project sponsors are expected to help the student identify an information quality problem within the sponsor's organization, and to work with the student's faculty advisor to develop a plan for addressing the problem. If the sponsor is an organization for which the student works as an employee, the project should be distinct from student's normal work duties and whenever practical, the sponsor within the organization should not be the student's immediate supervisor. Unless the student is an employee of the sponsoring organization, the sponsor is not expected to pay the student for work related to the project.

### ***Project Qualification and Proposal***

After a student who has elected to complete the program through the project option has met the minimum qualifications, the next step is to submit a written project proposal for review by the MSIQ Faculty Committee. An example proposal is included as Appendix A of this document. The student's project proposal must be approved by the MSIQ Faculty Committee before the student is given permission to enroll in either the INFQ 7386 or INFQ 7686 project course. In order to gain approval, a project proposal must address several key elements

- The project title should contain the phrase "Information Quality"
- It should identify the faculty advisor
- It should identify sponsoring organization and the member of that organization who will be project supervisor
- A description of the information quality problem that identifies at least 3 dimensions of information quality to be improved in the project
- How the level of quality will be assessed in each dimension at the start of the project and at the end of the project
- The major activities to be carried out by the student and approximate times for completing the activities

### **Project Completion and Grading**

The project is not considered complete until

- The student has completed the 6 hours of project credit as outlined in the Curriculum Requirements Section of this document
- The student has written and submitted a Project Report (in PDF format), and the Project Report has been approved by the MSIQ Faculty Committee. Guidelines for the format and content of the Project Report are given in Appendix B
- The student has made an oral defense of the project to the MSIQ Faculty Committee. The oral defense can only be scheduled after the Project Report has been approved

Based upon a review of the content of the report, the quality of the presentation, and input from the project supervisor, the MSIQ Faculty Committee will assign the project courses a grade of CR (Credit) or NC (No Credit). A project must receive a grade of CR (Credit) in order to complete the project requirement for the MSIQ Degree.

If the Project Report and Project Defense requirements have not been completed by the end of the semester in which a project course (INFQ 7386 or INFQ 7686) has been taken, the course will be given a grade of IP (In-Progress). Once the Project Report and Project Defense requirements are completed, all project courses in current or past semesters having a grade of IP will have their grade changed to final project grade of CR or NC as determined by the MSIQ Faculty Committee.

## APPENDIX A - EXAMPLE PROJECT PROPOSAL

### Project Proposal for the Master of Science in Information Quality Program

**Project Title:** Improving the Quality of Alaska Law Enforcement Information through Inter-Agency Data Sharing

**Student:** Samantha Jones

**Faculty Advisory:** Dr. Emily Smith

**Sponsoring Organization:** Alaska State Police

**Organizational Supervisor:** Sgt. Millard Fillmore, Chief Technology Officer, Alaska State Police

**Supervisor Contact Information:**

Sgt. Millard Fillmore  
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(office) 907-456-3898

**Date Submitted:** 5/3/2007

**Estimated Completion Date:** 12/21/2007

### MSIQ Committee Approval

**Committee Members**

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Name	Date
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Name	Date
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Name	Date
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**Organizational Supervisor**

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Name	Date
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**Graduate Coordinator**

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Name	Date
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## Project Description

This project is to help the Alaska State Police with the creation of a Fusion Center. A fusion center is an effective and efficient mechanism to exchange information and intelligence, maximize resources, streamline operations, and improve the ability to fight crime and terrorism by merging data from a variety of sources (Fusion Center Guidelines: Executive Summary).

The U.S. Department of Justice's Global Justice Information Sharing Initiative's sets out the guidelines of what a Fusion Center should be but they did not offer any standards on how a Fusion Center should operate or how the data should be collected, used, or reconciled. The State Police has asked for help in evaluating the technologies that exist in this market space. The items of interest in the evaluation this includes Entity Resolution, Pattern Analysis, and Case Management.

My portion of the overall project is to help show the State Police how data from multiple sources can be consolidated to provide a more complete view. Possible sources of data include Police data from local city and county agencies, property taxes, DMV records, Marriage/Divorce records, civil court records, etc. Other possible sources of data include Department of Corrections (DOC), Alaska Crime and Information Center (ACIC), and the Department of Finance Administration (DFA).

## Impact on Information Quality

The primary information quality issues are related to the dimensions of

- Completeness - officers in field and case managers often do not have access to all the information about a suspect or person of interest  
**Metric:** Case managers will rate completeness on monthly survey
- Access - information resides in many different agencies and databases is not readily available  
**Metric:** Monthly statistics on number of agencies participating and number of record contributed.
- Timeliness - currently it may take several days to request and receive information from another agency  
**Metric:** Monthly statistics on average turn-around time from request to delivery of information by agency collected from information request forms
- Value-Added - no one piece of information may be that important, but when assembled into a complete picture it could solve or prevent a crime  
**Metric:** Monthly statistics on percentage of case closures

**(Other dimensions that may be relevant for a project include:**

**Free-of-error (accuracy), believability, reputation, relevancy, amount-of-data, interpretability, representational consistency, conciseness of representation, manipulability, security)**

## Objectives

The objective of my project is to demonstrate how the integration the data can be accomplished. In producing the report and other deliverables I hope to provide the State Police with an understanding of how they can begin to assemble a Fusion Center from an IT perspective.

## Project Deliverables

1. An Information Product (IP) Map (or series of maps) of the proposed data sources. This will allow the Alaska State Police to see how the data can integrated and where problems can occur in the integration process.
2. A written plan of how the disparate data can be integrated and reconciled. This plan will be based on what is learned from the IP Maps and the interviews with the participants.

3. If time permits, a simple prototype demonstrating the entity resolution and data integration process.

### **Methodology**

Since this project will be about the reconciliation and recognition of disparate data sources and differing data collection methods. I have requested access a sample dataset(s) from the participating parties. If I am not able to get access to it, I have asked to get the schemas for the data so I can create simulated datasets.

### **Technology Description**

The software program language and specifications that I plan to use in this project are:

- dfPower Studio is a data quality tool produced by SAS. This tool will be used as the entity relation tool for this project.
- MySQL 5.0 is a free Relational Database. It will be used to store the demo data.
- Java to develop any software tools needed for the project.
- Global Justice XML (GJXML), an XML specification for allowing interoperability between data sources containing law enforcement data.
- National Information Exchange Model (NIEM) is the new specification that will supersede GJXML as the exchange mechanism.

### **Ethical and Privacy Issues**

There are several ethical issues that I will have to deal with in this project. The first is access to information. I will first have to sign a Confidentiality Agreement and undergo a standard State Police Background Check. Also the data that will be used will be restricted to Freedom-Of-Information (FOI) data and other publicly available data.

### **Proposed Data Processing**

The source data will be stored in an MySQL database. A “query engine” will access the different tables to simulate data acquisition from multiple data sources. The results will be returned, cleansed and standardized, then presented to the user. Counts will be produced by running queries against the database.

### **Proposed Chapters of the Final Report**

At present my proposed chapters are:

1. Cover
2. Title page
3. Table of contents
4. List of tables/exhibits
5. Executive Summary
6. Introduction
7. Body
8. Conclusion
9. Glossary
10. Appendices

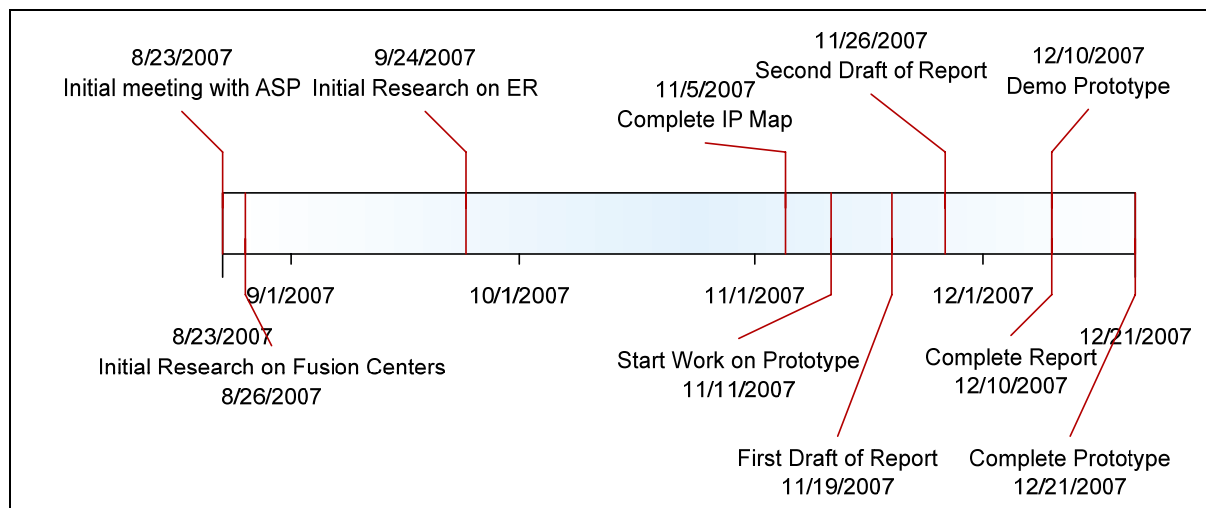
### **Problems and limitations of the project**

The major problems with the project would be around the data, both the availability and the quantity. If the data is not available then the schemas for the participating agencies will be requested and simulated

data based on these schemas will be created. Also by creating my own simulated data, I can control the size of the datasets and avoid overloading the test system

**Project Timeline**

Weeks 1 – 7	Initial research on Fusions Centers, Entity Resolution and interviews with participants.
Weeks 6 – 10	Development of data sources and IP Product Map
Week 8	Start Work on Paper
Week 12	Complete IP Map
Week 13	Start Work on Prototype
Week 17	Complete Project



## APPENDIX B - Project Report Guidelines

### *Style Guidelines*

- Single-spaced
- Standard non-script font such as Times New Roman, Calibri, or Tahoma
- 11 or 12 pt font size
- Page setup: 8.5"x11" letter size, portrait orientation
- 1" page margins
- Page numbers
- Total page count: No more than 50 pages including cover, body, and appendices

### *Layout Guidelines*

#### **Sections**

- i) Cover Page
- ii) Report Body
  - (1) Executive Summary
  - (2) Background
  - (3) Assessment of Quality at the start and end of the project
  - (4) Description of project activities
  - (5) Conclusion
  - (6) Acknowledgement
- iii) Appendices

### *Content Guidelines*

#### **Cover Page Items (centered)**

- Project Title: Should include the words "Information Quality"
- Subtitle: "Submitted in Partial Fulfillment of Requirements for the Master of Science in Information Quality"
- Student Name:
- Submission Date:
- Faculty Advisor's Name:
- Name of the Sponsoring Organization
- Name and title of the Project Supervisor

#### **Executive summary**

An executive summary is required and should be no longer than one page. The executive summary should clearly show the overall results of the project including measurements demonstrating improvement. Don't save any surprises for the conclusion, disclose everything important in the executive summary.

## **Background**

- Describe the information quality issues and their impact on the organization
- Describe any previous and/or current efforts by others in the organization to address these issues.

## **Quality Assessment at Start and End of Project**

It is critical that the report clearly shows the improvement of information quality in some quantitative way. Quantitative measures of information quality taken at the both the start and the end of the project should demonstrate this improvement in at least some dimensions. Although some assessment measures can be anecdotal or subjective in nature, at least some of the measurements should be quantitative. For the quantitative measures

- Identify the dimensions or characteristics of the information quality being measured.
- Describe the methodology for taking the measurements.
- For smaller sets of measurement data, include in the body of the report, otherwise include in an appendix.

## **Description of Project Activities**

In this section, clearly explain which parts of the project were completed by the student and which parts were completed by other participants.