Software Plan

School of Science
Device Networking System

Requested by:

Mr. Ken Swarner
Senior Systems Administrator
Siena College
School of Science

Mr. Eric Crossman
Assistant Systems Administrator
Siena College
School of Science

Orion Technologies

Prepared by: Aleksandr Spektor
Kevin Marsteller
Nicholas Hogan
Christopher Vincek

September 21, 2007

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School of Science Device Networking System

1.1 Problem Definition

Mr. Ken Swarner and Mr. Eric Crossman do not have a way to easily locate and manage network devices within the School of Science. The information Mr. Swarner and Mr. Crossman have about these devices is stored in their own Oracle database. This database does not store the specific location of network devices. Our clients have requested that we develop an enhanced web based network mapping tool with a toolbox which will organize network device information.

1.2 System Justification

The current system in place does not allow for quick changes to the database. With our enhancement to the current software, our clients will be able to easily locate and relocate devices on the network map and make appropriate changes. The updated system will save our clients time and effort.

1.3 Goals for the System and for the Project

The goal of this software is to be able to access a virtual representation of the floor plans in the School of Science through a web-based interface. These floor plans will display the location of all network devices present in the room. The program will display detailed information pertaining to those devices.

Our software will be able to move network devices around within a room or move a network device to a different room in the school of science. Our software will be well documented to allow for additional features to be added if our clients request them in the future.

Our team goal is to gain knowledge within the field of Software Engineering through our experience with our clients. We intend to gain experience through this project that will better prepare us for careers in the field of Software Engineering.

1.4 Constraints on the System and on the Project

The Software provided to our clients must be on a secure server. No other constraints have been brought to our attention at this time.

1.5 Functions to be Provided

1 A dynamically generated graphical interface map of all floors within Roger Bacon and Morrell Science Center with the capability to zoom in on specific rooms.

2 The ability to click on any device located in a room and view all pertinent information related to the device.

3 A toolbox with the capability of moving network devices around in a given room or from one room to another

1.6 User Characteristics

There will be three different types of users:

1. The “administrator” has full read/write access to the database
2. The “assistant” has limited write capabilities but full read capabilities
3. The “member” has read capabilities for specific devices

1.7 Development/Operating/Maintenance Environments

The development of our software will take place in Roger Bacon 348, the Software Engineering lab. We will be using a Dell Windows PC running Windows XP Professional, along with an iMac running OS X. Some software titles we will use include: Dreamweaver, Oracle, and BlueJ. Any given user will be able to run our software on MS Internet Explorer 6.0+, Mozilla Firefox 1.5+, or Apple Safari 2.0+.

1.8 Solution Strategies

Our team will follow the Linear Sequential Model for Software Engineering (also known

as the Classic Waterfall Model), following these major steps:

1 *Software Plan* – Definition of the problem that needs to be solved and outline of the overall expectations of the final project.

2 *Requirements Specification* – Meet with the clients and gather information needed to establish the requirements of the software.

3 *Preliminary Design* –Subsystems that perform the desired system functions are designed and specified in compliance with the system specification.

4 *Detailed Design* –Specification of interfaces between the system and its intended environment and a comprehensive evaluation of the systems logistical, maintenance and support requirements is designed.

- *Acceptance Test* – Demonstrates that the software meets all functional and non-functional requirements.

1.9 Priorities of System Features

The existing program is currently unable to add and remove network devices from the interactive maps. The existing program is also static and doesn't allow for existing devices to be moved within their respective rooms or to other rooms. Any future changes to the layout of a building or to the information pertaining to network devices will be easily made in the program. Any changes made to our clients' Oracle database will be reflected in our Software. These changes include the addition or deletion of network devices, as well as changes to device detail information. These changes will be accomplished through an addition of a toolbar that will allow the user to manipulate network devices within the selected room.

1.10 System Acceptance Criteria

Our finished product will successfully meet the following criteria:

- Web-based mapping tool for the network.
- Zoom feature to view the maps in more detail.
- Ability to add and remove computers.
- Password protected.
- Function properly in multiple browsers.

- Search function for computers and faculty
- Secure updated database of all devices in the school of science, as well as their locations
- Toolbar to allow movement of network devices within each room or to other rooms in the School of Science

1.11 Sources of Information

The information presented in this Software Plan was gathered in meetings with our clients, Mr. Ken Swarner and Mr. Eric Crossman, of the Computer Science Department of Siena College. Other information included was collected from the textbook for this course, Software Engineering: A Practitioner's Approach by Roger S. Pressman. Additional information and layouts were gathered from Software Plans created in previous years by students in the Software Engineering course.

2.1 Life Cycle Model: Linear Sequential (Classic Waterfall) Model

Software Plan – Definition of the problem that needs to be solved and outline of the overall expectations of the final project.

Requirements Specification – Meet with the clients and gather information needed to establish the requirements of the software.

Preliminary Design –Subsystems that perform the desired system functions are designed and specified in compliance with the system specification.

Detailed Design –Specification of interfaces between the system and its intended environment and a comprehensive evaluation of the systems logistical, maintenance and support requirements is designed.

Acceptance Test – Demonstrates that the software meets all functional and non-functional requirements.

2.2 Organizational Structure

Orion Technologies is comprised of the following team members:

Name	E-mail	Phone Number
Aleksandr Spektor	a22spek@siena.edu	518.783.1847
Kevin Marsteller	k06mars@siena.edu	631.707.2791
Nicholas Hogan	nb18hoga@siena.edu	518.598.7669
Christopher Vincek	cr30vinc@siena.edu	973.570.2490

The team members hold the following positions:

Aleksandr Spektor	Team Leader
Kevin Marsteller	Webmaster
Nicholas Hogan	Information Specialist
Christopher Vincek	Systems Administrator

The team is designed as a democratic unit. The decisions are made with the majority vote, with the team leader deciding ties, and setting the agenda.

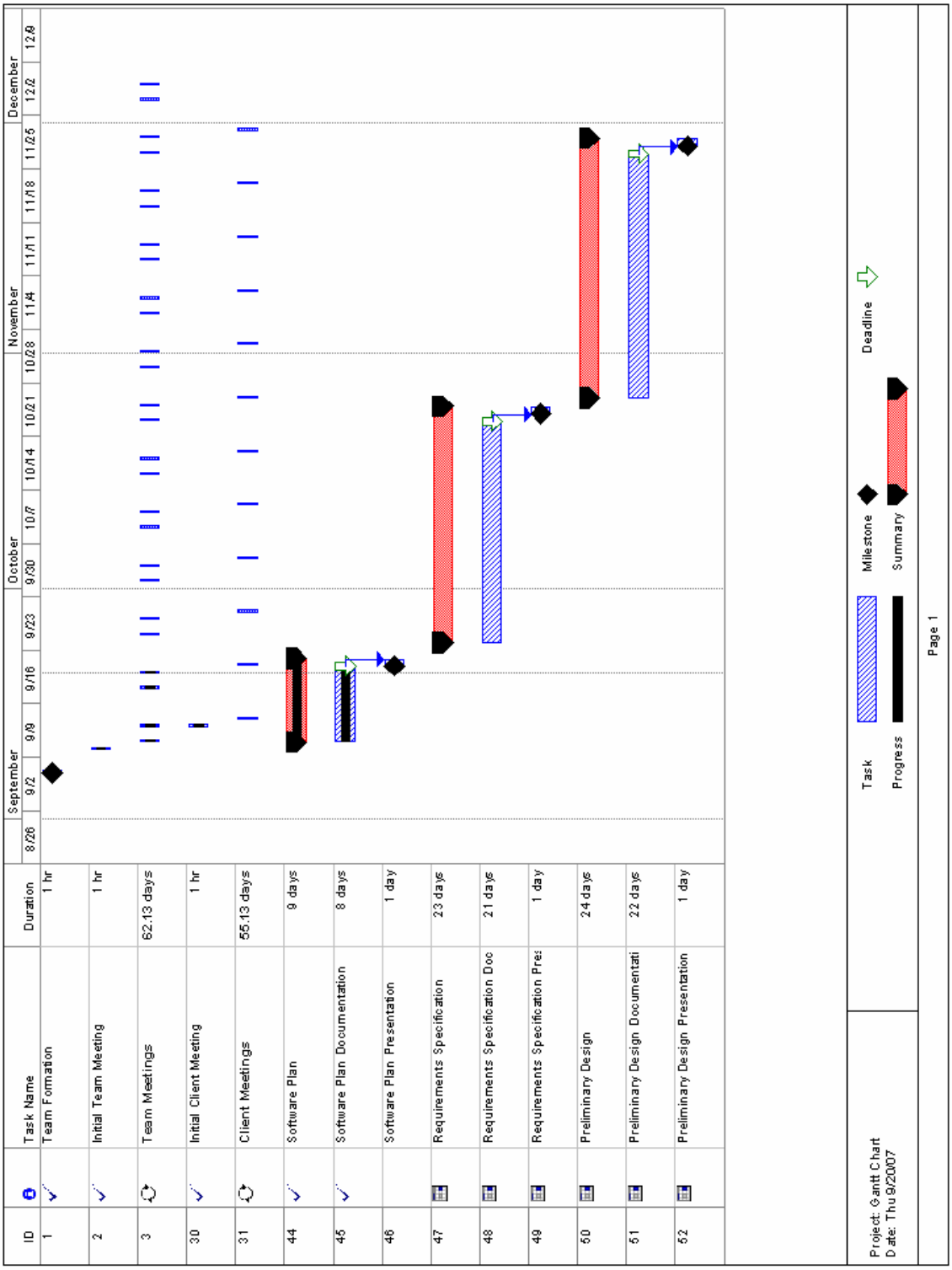
The description of each position is as follows:

Team Leader	Organizes and sets up meeting with the team as well as clients, sets the plan for the semester, sets goals for other team members.
Webmaster	Creates and maintains the team's website.
Information Specialist	Responsible for documenting all meetings, organizing reports, and keeping track of all documentation.
Systems Administrator	Maintains all hardware and software on the team's computers as well as administrates user accounts.

2.3 Preliminary Staffing and Resource Requirements

Our team will require a number of hardware, software and human resources. The hardware resources include: a server to hold our team database, one Mac OS X and one Dell loaded with MS Windows XP. Software needed includes: Deamweaver, Oracle and BlueJ. Human Resources include: Mr. Ken Swarner, Mr. Eric Crossman and Dr. Tim Lederman.

2.4 Preliminary Development Schedule



2.5 Project Monitoring and Control Mechanisms

Our team will meet weekly with our clients to ensure our plans match the needs of the client and in this manner any miscommunication can be corrected quickly. We will have a team meeting at least weekly and often bi-weekly to discuss any issues that have arisen with the project and to divide out the tasks that need to be done for the coming week. This ensures continuous communication between the team leader, all group members, and our clients.

2.6 Tools and Techniques to be Used

Our team will use a desktop iMac loaded with OSX as well as a Dell PC loaded with Windows XP Professional. Both computers are loaded with various software titles our team will use including Macromedia Dreamweaver, Microsoft Project, Microsoft Office, BlueJ, and Oracle. We will be using techniques from Software Engineering and other computer science courses to accomplish our goals.

2.7 Programming Languages

Our team will use HTML and PHP to design and format web pages that will illustrate computer locations in each room of the building. We will use a high level programming language for the purposes of adding, removing, and moving around network elements in the rooms.

2.8 Testing Requirements

All project components will be tested upon completion. Clients will be notified when the project reaches a point where their participation in testing is needed. Our clients will be be encouraged to participate in the testing process. The clients will receive a printed copy of all documents, including test results. The acceptance test will include a test of all functional requirements.

2.9 Supporting Documents Required

We will be providing supporting documentation to our client at least five times during the software engineering process, with more added if it is determined to be necessary. The documents will be delivered to the clients, as well as posted to a company website. The five times currently provided are:

Project Definition / Project Plan	September 19, 2007
Software Requirements Specification	October 22, 2007
Preliminary Design	November 26, 2007
Detailed Design	February 15, 2008
Acceptance Test	April 22, 2008

2.10 Manner of Demonstration and Delivery

At certain milestones throughout the year, we will present the status of our project to our clients. The clients will be given a hard copy report and be invited to attend a powerpoint presentation on the status of our project.

Project Definition / Project Plan	September 21, 2007 September 23, 2007
Software Requirements Specifications	October 24, 2007 October 26, 2007
Preliminary Design	November 28, 2007 November 30, 2007
Detailed Design	February 16, 2008
Acceptance Test	April 22, 2008

2.11 Sources of Information

The primary sources of the information in this document are our clients Mr. Eric Crossman and Mr. Ken Swarner. Other sources include the textbook, *Software Engineering: A Practitioner's Approach* by Robert Pressman; as well as Dr. Tim Lederman and the website www.Siena-Sofware-Engineering.com.

3.1 Glossary of Terms

Database - A collection of data arranged for ease and speed of search and retrieval.

Linear Sequential Model / Classic Waterfall Model – Is a systematic sequential approach to software development projects, it begins with planning and progresses to modeling, construction, deployment and finally culminates in the finished software. Our specific approach will begin with this Software Plan and will progress though Requirement Specifications, Preliminary/Detailed and finally Acceptance Tests.

Network Device – Any computer, printer, wireless access point or other network accessory connected to the School of Science network.

Virtual – Created, simulated, or carried on by means of a computer or computer network.

Web Server – A computer program that is responsible for accepting Hypertext Transfer Protocol (HTTP) requests from clients, which are known as web browsers, and serving them HTTP responses along with optional data contents, which usually are web pages such as HTML documents and linked objects (images, etc.).

3.2 Team Resumés

Christopher Vincek

cr30vinc@siena.edu

Present Address:
SPOB 3533, 515 Loudon Rd.
Loudonville, NY 12211
Cell: (973)-570-2490

Permanent Address:
30 Eric Trail
Sussex, NJ 07461
Home: (973)-702-8505

OBJECTIVE

To obtain an entry-level position in the field of Computer Science.

EDUCATION

Siena College, Loudonville, NY
B.S. Computer Science; Mathematics Minor, December 2008

RELEVANT COURSEWORK

Intro. to Computer Science, Intro. to Programming, Data Structures, Object-Oriented Programming, Discrete Mathematics I & II, Computer Architecture and Assembly Language, Operating Systems, Analysis of Algorithms, Database Management Systems I, Software Engineering I, Web Design, Calculus I & II.

COMPUTER SKILLS

Experience with Microsoft Visual Basic and Java programming languages.
Proficient in Microsoft Word and Powerpoint; familiar with Excel.
Experience with a Unix Operating System.

TECHNICAL EXPERIENCE

Software Engineering I Semester Course – Siena College
System Administrator – Fall 2007

- Maintained software and hardware on the team's computers.
- Administrated user accounts.

ADDITIONAL EXPERIENCE

Various Positions, **ShopRite Supermarkets**, Warwick, NY, Summer 2005, 2006, 2007.
Worked as a Front End clerk and increased my responsibilities to the Produce and Frozen Foods Departments over time.
Improved communication skills through customer interactions.

Student Assistant, **Stage Three Scene Shop**, Siena College, Fall 2005 – Present.
Aided in the construction of sets for various theater productions.

Kevin Marsteller

k06mars@siena.edu

Present Address:
SPOB 3817, 515 Loudon Rd.
Loudonville, NY 12211
Cell (631) 707-2791

Permanent Address:
32 Vidoni Dr
Mt. Sinai, NY 11766
Home (631) 331-7902

OBJECTIVE

To obtain a job in the Computer Science field that will challenge my abilities and stimulate my interests.

EDUCATION

Siena College, Loudonville, NY
Bachelor of Science, Computer Science, May 2008
GPA: 2.93 / 4.0
GPA in Major: 3.52 / 4.0

RELEVANT COURSES:

Procedural Design-Programming, Data Structures, Assembly Lang and Comp Architecture, Object-Oriented Design and Programming, Analysis of Algorithms, Data Base Management, Advanced Database, Intro to Artificial Intellig, Web Design, Computer Graphics, Software Engineering, Adv. Prog Techniques

COMPUTER SKILLS

- **Proficient in:** Java, XHTML, CSS, PHP, XML
- **Knowledgeable in:** C++, Visual Basic, Python
- **Familiar With:** Microsoft and related applications, Oracle, Macromedia Studio 8

RELATED EXPERIENCE

Computer Science Lab Assistant, Siena College (January 2007-present)

- Provide assistance to computer science faculty for various projects
- Designed animation to visualize research done at MIT

Programming Consultant, Dr. Karen Boswell, Psychology Department, Siena College (February 2007 - May 2007)

- Helped Psychology department in the designing of two computer-based experiments
- Worked closely with teacher and student in the functionality of these programs
- Wrote programs focusing on GRE testing methods and perception with Human Cognition
- Final programs utilized in two upper level Psychology courses

Independent Study, Dr. Scott Hunter, Computer Science Department, Siena College (June 2006 - August 2006)

- Collaborated on improvements made to CPUSim, a computer chip simulator.
- Improvements focused on making coding easier for student user.
- New version featured in CSIS220: Assembly Language and Comp. Architecture

ADDITIONAL EXPERIENCE

- **Office Assistant,** Liberty Mutual (June 2005 - August 2005)
- **Lifeguard**, Splish Splash Water Park (June 2004 - August 2004)
- **Assistant Site Director**, Suffolk County Junior Tennis League (July 2007-August 2007)

ACTIVITIES

- **Student Mentor**, Siena Mentoring Program (February 2006-present)
- **Concerts Committee**, Siena College Student Events Board (September 2006-April 2007)

- **Teacher,** Vacation Bible Schoole (Summers of 2005, 2006, 2007)

Aleksandr Spektor

Objective	To obtain a job in the computer science sector
Education	**Siena College**, Loudonville, NY B.S. in Computer Science, May 2008 Minor in Mathematics and Multimedia Current GPA: 3.83/4.0 in Computer Science
Computer & Language Skills	• Languages: Proficient in Russian, able to read Hebrew • Computer Languages: Proficient in Java, C++, Visual Basic, worked with javascript, PHP, Assembly Language, MySQL • Worked with Minix Operating System, Oracle Databases • Microsoft Word, PowerPoint, Excel

Work Experience

Computer Science Tutor, **Siena College**, Loudonville, NY September 2005- Present

- Work on an individual basis with any students who need help on homework or a project in a CS 100 or 200 level course

Photo Lab Technician, **CVS/Pharmacy,** Niskayuna, NY September 2003- August, 2006 (Latham, NY September, 2006-Present)

- Developing negatives and printing photographs from film or digital media
- Demonstrating customer service, problem solving, anticipating/preventing problems
- Working with hazardous chemicals and waste from machines
- Marketing weekly sales in the photo lab
- Exemplified motivation and initiative by volunteering for work outside of my assigned duties

Caller for Alumni House, **Siena College**, Loudonville, NY February-April, 2004

- Called Siena College Alumni and the parents of current students to solicit a gift to the college

I&TS Connection Help In Person (CHIP), Siena College, Loudonville, NY September 2005 + September 2006 + September 2007

- Trained to solve any reasonably common issue with connecting the computers of Siena students onto FranNet, the Siena College Campus Network

Community Activities

Public Relations Officer, ISA (International Student Association), Siena College, September 2006-Present

Nicholas Hogan

7 Bradstreet Ct.
Delmar, NY 12054
Cell: (518) 598-7669
Email: nb18hoga@siena.edu

Objective

To obtain a position in the computer science field, with a special interest in web design.

Education

Siena College, Loudonville, NY
B.S. in Computer Science, Mathematics Minor, May 2008

Relevant Courses of Study

1 **Computer Science:** Intro to Programming, Data Structures, Assembly Language and Computer Architecture, Objected Oriented Design and Programming, Analysis of Algorithms, Computer Graphics, Web Design

2 **Mathematics:** Calculus 1 & 2, Discrete Structures 1 & 2, Linear Algebra, Modern Algebra

Experience

Post Service Attendant, **Siena College**, Loudonville, NY 2006-Present

1 Responsible for delivering, separating, and applying postage to business mail.
2 Customer service including the selling public postage and other postal services.
3 In charge of the training of newly hired attendants in all the aforementioned postal services.

Office & Warehouse assistant, **Control Network Communications**, Albany, NY 2003-2005

1 General warehouse and office work
2 Updated and maintained computer based inventory system
3 Drafted CAD blueprints for Clients

Additional Experience

Summer days tour guide, **Siena College**, Loudonville, NY 2007

Computer Skills

1 Programming in Java, VB, C++, HTML, CSS, PHP, JavaScript and SQL
2 Proficient in Windows 9x/2000/XP, Office, Excel, PowerPoint, Word, Outlook, Dreamweaver
3 Familiar with Access, Flash, Fireworks, XHTML, XML