

# SIGESPro - Sistema de Gestión y Seguimiento de Proyectos de Software

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*Summary* — This document describes the implementation of a web application development project management software for the company VimeWorks Cia. Ltda.

Between the processes is required assignments, user requirements within a centralized authorization environment, project monitoring and status reports thereof.

## *Index Terms* —

**Action script.** Programming language of the Adobe Flash Platform, allows much more efficient applications platform for building Flash animations of all types, from simple to complex, data-rich and interactive interfaces.

**LDAP.** Stands for Lightweight Directory Access Protocol referring to an application-level protocol which allows access to a directory service ordered and distributed.

**RIA.** Rich Internet applications or rich Internet applications are web applications that have most of the features of traditional desktop applications. These applications use a standard web browser to run and through supplements or through a virtual machine add additional features.

## I. INTRODUCTION

### A. *The Company*

VimeWorks was created in 2000 by David Meza and Carlos Vinueza. It is located in the province of Pichincha, Quito in the direction Coruña Avenue N27-114 and Orellana Avenue. The services provided are distributed application development on J2EE technology and. NET, J2EE: JSP, Servlets, XML, Oracle 9iAS, JBoss, Tomcat, consulting services, etc.

### B. *Problemática*

The problem of the company came to an inability to adequately control the development of software projects, and get immediate feedback on the

progress of each project, delayed projects, breach of duties among others.

### C. *Objectives*.

Designing a tool to monitor and control the development of many projects of the company.

Integrate with a centralized authentication system and provide services for authorization and access control to the system using a framework.

Allow allocation of project managers and developers to each project.

Facilitate the assignment of tasks to developers participating in the projects.

Allow the developer to report progress on each of their tasks.

Enable error reporting of projects and report project status.

## II. APPLICATION DESIGN

### A. *Architecture*

The core of the application is built on the J2EE platform with JBoss Seam framework to enable user authentication was used and a single LDAP server in this case SignOn JASIG.

Permission to access it done by Seam-Security which performs the function of controlling access only to resources assigned.

User interfaces were performed using Adobe Flex.

As database engine PostgreSQL is used for access to these data did by JPA and EJB 3.

## III. APPLICATION DEPLOYMENT

### A. *Risks*.

Risks found prior to the development of SIGESPro were: Reset to system architecture. Change in software development processes in the

company is required for a project and can't end this. Since there is not the interest of the company to continue with this project.

*B. Scope.*

The project scope SIGESPro - Project Management System Software - served its purpose, it allows the company to manage the control and supervision of multiple projects, additionally allows project managers to assign specific tasks to each of the developers, generates a Gantt chart based on project tasks and issues reports on the progress of projects.

*C. The problem.*

It arose from the absence of a tool which allows, track projects suited to software development that lets you store information in the same.

*D. Stakeholders.*

Ing. Mauricio Rea. Director de tesis.

Sr. Edison Lomas. Egresado de la Carrera de Ingeniería en Sistemas Computacionales

Ing. Mauricio Santacruz. Responsable a nivel directivo de VimeWorks Cía. Ltda.

*E. Users*

**Administrator.** System Manager. Create projects, building development groups.

**Project Manager.** Project Manager assigned to it. Create tasks within the project and assigned to the group of developers.

**Developer.** Member of the team of programmers. Report progress of assigned tasks.

**User.** Functional system user to develop. Request new requirements and / or reports errors (issues).).

*F. User Environment and Perspective.*

SIGESPro handles four types of roles: Administrator, Project Manager, Developers and Users.

The Administrator role allows creating new projects with their parameters.

The Project Manager role allows developers to assign tasks and review your progress, receives all requests for change of users and routed to you develop for your solution.

The Developer role has interface management issues assigned to it and can record the start of its activities, compliance and progress updates on the same.

The role facilitates users report issues in the system to be served by the project team.



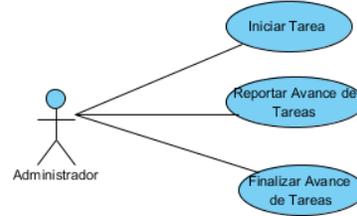
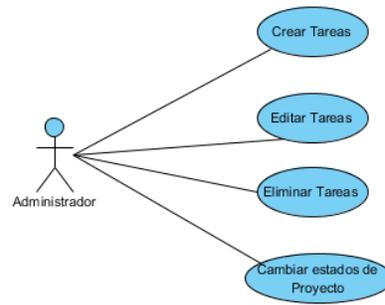
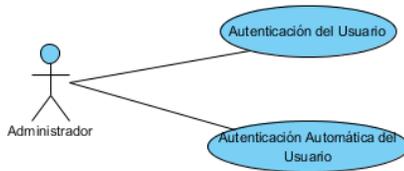
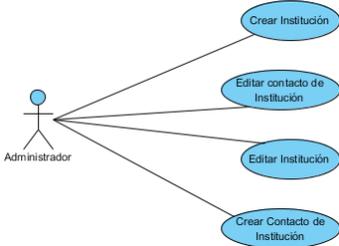
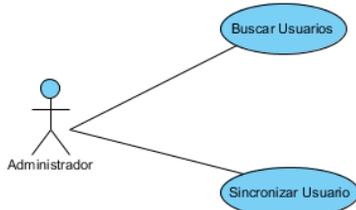
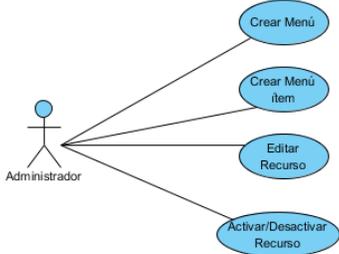
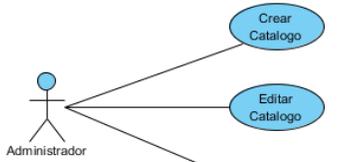
*G. Requirements.*

GENERAL INFORMATION	
Number of current users:	25
Maximum number of users in 12 months:	50
Number of transactions expected present:	25
Expected transaction number at 12 months:	50
Application availability:	24/7/12

HARDWARE	
<b>Server:</b>	Procesor XEON, 5 Gb. En RAM
<b>Storage:</b>	500 mb

Software	Name	Version
<b>Operative System:</b>	Red Hat Enterprise Linux Server	5
<b>Data Base:</b>	PostgreSQL	8.4
<b>Application server:</b>	JBoss Application Server	6
<b>Others:</b>	JDK	1.6

H. Use case.



I. Diccionario de datos.

**TABLE CATALOGO**

- CODIGO\_CATALOGO.
  - Numeric(8,0)
  - Obligatorio
  - Clave primaria
- NOMBRE\_CATALOGO
  - Varchar(50)
  - Obligatorio
- DESCRIPCIÓN\_CATALOGO
  - Varchar(500)
  - No obligatorio
- ESTADO\_CATALOGO
  - Char(3)
  - Obligatorio
- CODIGO\_TIPO\_CATALOGO
  - Numeric(8,0)
  - Obligatorio

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- CODIGO\_CONTACTO
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  - Clave primaria
- NOMBRE
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  - Obligatorio
- CARGO
  - Varchar(200)
  - Obligatorio
- MAIL
  - Varchar(100)
  - Obligatorio
- TELEFONO
  - Varchar(9)
  - No obligatorio
- EXTENSION
  - Varchar(5)
  - No obligatorio

- CELULAR
  - Varchar(9)
  - No obligatorio
- NOTA
  - Varchar(500)
  - No obligatorio
- RUC
  - Char(13)
  - Obligatorio

**TABLE DEPENDENCIA\_TAREA**

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  - Obligatorio
  - Clave primaria
- TAREA\_DEPENDIENTE
  - Numeric(8,0)
  - Obligatorio
- TAREA
  - Numeric(8,0)
  - Obligatorio

**TABLE INSTITUCION**

- RUC
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  - Clave primaria
- NOMBRE
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  - Obligatorio
- DESCRIPCION
  - Varchar(500)
  - No obligatorio
- DIRECCION
  - Varchar(250)
  - Obligatorio
- TELEFONO\_1
  - Varchar(9)
  - No obligatorio
- TELEFONO\_2
  - Varchar(9)
  - No obligatorio
- TELEFONO\_3
  - Varchar(9)
  - No obligatorio
- TIPO\_INSTITUCION
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  - Obligatorio

**TABLE PARAMETRO**

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- CODIGO\_CATALOGO
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  - obligatorio
- CODIGO\_PROYECTO
  - Numeric(8,0)
  - obligatorio
- TIPO\_VALOR
  - Char(3)
  - Obligatorio

- VALOR\_NUMERICO
  - Numeric(8,2)
  - No obligatorio
- VALOR\_CADENA
  - Varchar(500)
  - No obligatorio
- VALOR\_FECHA
  - Date
  - No obligatorio

**TABLE PROYECTO**

- CODIGO\_PROYECTO
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  - Clave primaria
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  - Obligatorio
- DESCRIPCION
  - Varchar(500)
  - Obligatorio
- ESTADO\_PROYECTO
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  - Obligatorio
- ESTADO
  - Char(3)
  - Obligatorio
- INSTITUCION
  - Char(13)
  - Obligatorio
- JEFE\_PROYECTO
  - Varchar(13)
  - No obligatorio
- FECHA\_INICIO
  - Date
  - No obligatorio
- FECHA\_FIN
  - Date
  - No obligatorio

**TABLE RECURSO**

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- DESCRIPCION
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  - No obligatorio
- URL
  - Varchar(100)
  - No obligatorio
- ESTADO
  - Char(3)
  - Obligatorio
- REC\_CODIGO\_RECURSO

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- No obligatorio

**TABLE ROL**

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- DESCRIPCION
  - Varchar(100)
  - No obligatorio
- ESTADO
  - Char(3)
  - Obligatorio

**TABLE ROL\_RECURSO**

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  - Obligatorio
  - Clave primaria
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  - Obligatorio
- CODIGO\_RECURSO
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**TABLE TAREA**

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  - Clave primaria
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  - Obligatorio
- DESCRIPCION
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  - Obligatorio
- TIEMPO
  - Numeric(3,0)
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- FECHA\_INICIO
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  - No obligatorio
- FECHA\_FINAL
  - Timestamp
  - No obligatorio
- CODIGO\_PROYECTO
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  - Obligatorio
- TIPO\_TAREA
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  - Obligatorio
- PRIORIDAD
  - Numeric(8,0)
  - Obligatorio
- ESTADO
  - Char(3)

- Obligatorio
- CODIGO\_USUARIO\_PROYECTO
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  - No obligatorio
- AVANCE
  - Integer
  - Obligatorio
- ESTADO\_DESARROLLO
  - Numeric(8,0)
  - No obligatorio
- TIEMPO\_PROPUESTO
  - Numeric(3,0)
  - Obligatorio
- FECHA\_INICIO\_PROPUESTA
  - Timestamp
  - Obligatorio
- FECHA\_FIN\_PROPUESTA
  - Timestamp
  - Obligatorio

**TABLE USUARIO**

- IDENTIFICACION\_USUARIO
  - Varchar(13)
  - Obligatorio
  - Clave primaria
- NOMBRE
  - Varchar(100)
  - Obligatorio
- MAIL
  - Varchar(100)
  - Obligatorio
- TELEFONO
  - Varchar(10)
  - No obligatorio
- CONTRASENIA
  - Varchar(50)
  - No obligatorio
- CODIGO\_ROL
  - Numeric(8,0)
  - No obligatorio
- ESTADO
  - Char(3)
  - Obligatorio

**TABLE TIPO\_CATALOGO**

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- DESCRIPCION\_TIPO\_CATALOGO
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- ESTADO\_TIPO\_CATALOGO
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  - Obligatorio

**TABLE USUARIO\_PROYECTO**

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  - Obligatorio
- PRO\_CODIGO\_PROYECTO
  - Numeric(8,0)
  - Obligatorio

#### IV. CONCLUSIONS

It is feasible to develop a system to monitor and control the development of many projects of the company.

The integration of an application with a centralized authentication and authorization provider is easily configurable.

By assigning project managers and developers to each project, inform member commitment to this project.

By selecting the developer responsible for each task is given the assignment of tasks by the project manager.

When each developer reports the progress of each of its tasks are easier to monitor the progress the project has.

By allowing users to report errors if function allows the user will have a greater commitment and is very involved with the project.

The management of a software project is very complicated as time estimate, and the ability of developers to fulfill different.

#### APPENDIX

**Ant.** Programming tool used to perform mechanical and repetitive tasks, usually during the compilation and construction (build). It is a software build automation processes developed in Java and requires the Java platform.

**Action script.** Programming language of the Adobe Flash Platform. Originally developed as a

way for developers to program more interactive. Programming with ActionScript allows much more efficient applications platform for building Flash animations of all types, from simple to complex, data-rich and interactive.

**Cas.** Central Authentication Service.

**Core.** core of project.

**Ejb.** Enterprise JavaBeans, are one of the APIs that are part of the standard building J2EE enterprise application Oracle Corporation (originally developed by Sun Microsystems).

**Framework.** It is part of the application or set of libraries designed to very large scale reuse of software components for rapid application development.

**Gantt.** It is a popular tool aimed graph showing the time devoted provided for different tasks or activities over a certain total time.

**Hibernate.** Framework to implement the persistence layer in Java. It is an open source project that enables the mapping of objects to a relational database language with its own data access HQL and SQL.

**Issuetraking.** Project Manager Errors.

**JPA.** Java Persistence API, framework to implement the persistence layer in Java. It is an open source project that enables the mapping of objects to a relational database.

**LDAP.** Stands for Lightweight Directory Access Protocol (Spanish Protocol Lightweight Directory Access) referring to an application-level protocol which allows access to a directory service to look neat and different information distributed in a network environment. LDAP is also considered a database (if your storage system may be different) for which to query. A directory is a set of objects with attributes organized in a logical and hierarchical. The most common example is the

telephone directory, which consists of a series of names (people or organizations) that are arranged alphabetically, with each name having an address and phone number attached.

**Mailinglist.** list of mail.

**Outsourcing.** Is the economic process in which a company moves or resources intended to accomplish certain tasks oriented toward an external company through a contract. This is especially true in the case of outsourcing of specialized companies. To do this, they can hire staff only case in which the resources will provide the client (facilities, hardware and software), or hire both staff and resources.

**POJOs.** Plain Old Java Object, a term used to emphasize that a Java object is simply an object bean basic utility. In practice a set of APIs are made by different manufacturers to provide an alternative implementation for EJB J2EE.

**Portlets.** Micro deployable self-contained applications on a supported server.

**Query.** Query string, this term is generally used to refer to an interaction with a database.

**RIA.** Rich Internet applications or rich Internet applications are web applications that have most of the features of traditional desktop applications. These applications use a standard web browser to run and through supplements or through a virtual machine adds additional features.

**Ruby.** It is an interpreted programming language, object-oriented and reflective, created by Japanese programmer Yukihiro "Matz" Matsumoto, who started working on Ruby in 1993, and presented publicly in 1995. It combines syntax inspired by Perl and Python programming features like Object Oriented Smalltalk. Functionality also shares with other programming languages such as Lisp, Lua, Dylan and CLU. Ruby is an interpreted programming language in a single pass and its official implementation is distributed under a free

software license.

**Seam.** Framework developed by JBoss, introduces the concept of contexts. Each Seam component exists within a context. The conversational context for example captures all user actions until it leaves the system or closes the browser - can even keep track of multiple tabs and maintains a consistent behavior when using the browser's back button.

**Servlet.** Small program that runs on a server. They are usually Java applications that run on a web server environment. This is analogous to a Java application that runs in a browser.

**Single-Sign-On.** It is the only authentication for the user to access your application resources. For the Single SignOn, lets you manage the passwords to access different applications using a single login and password so that users only need to remember one password.

**Stakeholders.** Is the public interest or the environment concerned.

**Tomcat.** It is a web server with support for servlets and JSPs. Tomcat is an application server like JBoss or JOnAS. Includes Jasper compiler, which compiles JSPs into servlets turning.

**Unicode.** It is a character encoding standard designed to facilitate computer processing, transmission and display of text in multiple languages and technical disciplines of classical texts plus dead languages. The term comes from the three Unicode objectives: universality, uniformity and uniqueness.

**Widget.** It is a small application or program, usually presented in small files or files that are executed by a widget engine or Widget Engine. Among its objectives is to provide easy access to frequently used functions and provide visual information. However, widgets can do whatever you want imagination and interact with services and information distributed on the Internet, can be showy display clocks, notes, calculators, calendars, diaries, games, windows with weather information in your city, etc. .

**XDoclet.** It is an open source engine for the Java programming language, its function is to generate code. It is associated with the attributes-oriented programming, that is, you can get more functionality by adding metadata (attributes) to your code. This is accomplished with XDoclet JavaDoc tags allows continuous integration in component-oriented development. Developers should concentrate their editing in a single Java source file for each component.

**XML.** Extensible Markup Language, or extensible markup language, language based on plain text documents with tags that define the elements. W3C was originally developed to separate the web into a flat structure contents, and in order to finish replacing HTML (<http://www.w3.org/XML/>). Today it has become the standard format for exchanging information between applications.

[18] <http://en.wikipedia.org/wiki/PostgreSQL>

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#### **Autores**

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