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| Software requirement specification |
| [Project Name] |
| [Version] |
| Prepared by [author]  [Create date] |

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# Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Date | Reason for changes | Version |
| Team | 20/11/2011 | initial version | 1.0 |
| Nguyen Dinh | 29/11/2011 | Review for initial version | 1.0.1 |
| Nguyen Dinh | 04/12/2011 | Update section 1 and fix some bugs on entire document | 1.0.2 |
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# Introduction

## 1.1 Purpose and Organization

The purpose of software requirement specification (SRS) document is to provide a technical view for all developers and stakeholders that can affect development progress. In addition, this document consolidates the functional requirements and quality attribute requirements of HRM. Before implementing the system, the SRS provides definitions and other pieces of information that contribute to a better understanding of the system. Therefore, it is a requirement for generating detail design document and requirement test cases.

The document is organized as follows:

* Section 2 – Overall Description: provides an overall description about HRM including product perspectives, features, user, operating environment, design and implementing constraints, user document, and system features.
* Section 3 – External Interface Requirements: provides detail information about requirement in user interfaces, hardware interfaces, software interfaces, and communication interfaces
* Section 4 – Other Nonfunctional requirement: provides requirements about quality attribute including performance, security requirements etc.
* Section 5 to 7 – Appendix: for listing Glossary, analysis models, and issues list

## Document Conventions

Use the comment function in review tab of MS word ribbon to denote a concept or any information that needs to be clarified. That way, one can later on search for comments and remove them or restate the points as appropriate.

This document is expected to evolve and will be considered a “living” document for the duration of the project. Major modifications to the contents of this document must be recorded in the revision history table. The history of modifications can also be retrieved from the version control system in use.

Use colloquial and clear language to communicate with the reader; avoid long, cluttered sentences.

Be objective and succinct; avoid redundancy of information.

The format of this document is not discourse or publication paper. In addition, we have assumed the reader of this document must be familiar with software engineering terminology. Therefore, it is not necessary to add the definition of basic technical terms (e.g. UML, XML)

Follow the process and guidelines defined in the Software Configuration Management Plan [SCMP].

## 1.3 Intended Audience and Reading Suggestions

Intended audience

|  |  |  |
| --- | --- | --- |
| No. | Audience | Purpose |
| 1 | Mentors | For reviewing and getting overall understanding about HRM |
| 2 | Development team | For developing architecture design, detail design, implementing, and testing document. |
| 3 | Other lecturers from VLU-CMU program | For reviewing and getting overall understanding about HRM |
| 4 | Lecturers from CMU | For reviewing and getting overall understanding about HRM |

Reading suggestions: The common practice among software engineers is that the SRS is not kept up-to-date after the system is implemented. Very often, during maintenance, developers make changes and additions to the actual system but do not update the SRS. Gradually the existing code becomes disconnected from the specifications in the SRS. Having that in mind, this document was created in a way that minimizes the burden of keeping requirements specifications rigorously up-to-date:

* Information in section 2 – overall description: 2.1 to 2.6 is rarely changed from initial version since they are high-level requirement and basic concepts of HRM. On the other hand, information in 2.7 is usually changed because of the fact that it states low-level requirements; however, easy-to-change parts are referred to separate artifacts. From time to time, the latest information will be updated into this document for consistency.
* Information in section 3- external interface requirements: is sometimes changed because those interfaces are somehow stable since easy-to-change parts are ported into other document. From time to time, the latest information will be updated into this document for consistency.
* Information in section 4 – other nonfunctional requirements: Quality Attribute Requirements is somewhat susceptible to change, but changes are manageable the amount of information is not very large.

## 1.4 Project Scope

This document only goes detail in personal information management module although there are seven modules (will be described later) in Human Resource System that is being developed by Software Center of VLU.

## 1.5 References

[*List any other documents or Web addresses to which this SRS refers. These may include userinterface style guides, contracts, standards, system requirements specifications, use casedocuments, or a vision and scope document. Provide enough information so that the reader couldaccess a copy of each reference, including title, author, version number, date, and source orlocation.*]

# Overall Description

## 2.1 Product Perspective

Human Resource System is a new system that replaces the current Human Resource System at Van Lang University operate dependent on manual process on excel. The context diagram illustrates the external entities and system interfaces for release. The system is expected to evolve over several releases for human resource management department at Van Lang University. Helping Resource Department is easy information management of staff and teacher such as training management, Function, Employee History, Position Management, Reward or Penalty, Family Relationship, Support People. This system must operate on distance between two local, the object manage staffs/teachers. Saving Personal Information Management of staff is working or retirement. In additional, the system will update auto large number staff/teachers information every year. Total and reporting result department at Van Lang University.

## 2.2 Product Features

HRM is particularly developed for human resource management in university / colleges. The system consists of key modules:

* Personal information management:
* Detailed management about employees’ background such as employees’ ID number, date of birth, place of birth, gender, number of insurance, address, telephone, current accommodation, working department, title, job title....
* Detailed Management about information on family relationships.
* Management about qualification, foreign language proficiency, information technology, politics.
* Managing employees’ storage of working records
* Detailed management about employees’ working experience
* Keeping track of employees’ praise and discipline records
* Keeping track of wages development of employees.
* Tracking the information on transferring work.
* Tracking what and where the employees are doing at any time
* Supporting the monitoring benefits of employees participating in social insurance and health insurance.
* Tracking leaves of all kinds such as illness leave, maternity leave….
* Report on personnel management:
  + Curriculum vitae
  + The statistics records of workers
  + Horizontal list of current excerpts and teachers
  + List of taking leaves
  + List of staffs-teachers whose contracts are expired
  + List of staffs-teachers who are going to retire
  + List of staffs - teachers are rewarded and disciplined
* Employee labor contract management:
* Detailed management about the contracts between the employees and employers: probation contracts, job training, the time limited and unlimited official contracts.
* Keeping track of renewal contract.
* Keeping track of storing profiles when employees quit working or suspend the contract.
* Recruitment & training processing:
* Detailed management about applicants’ profiles
* Keeping track of detailed information on the job interviews
* When applicants are chosen, the records will be automatically updated to official profiles of the staff
* Planning and monitoring the training plan implementation of the whole staff.
* Keeping track of the training, and the cost for training implementation.
* Keeping track of the advanced training cost and payment for each member in the teaching staff.
* Payroll:

The input figures for the salaries such as the minimum wage, payment for further study, long - term training, payment for working overtime, the figures of salary adjustments based on the results and how to emulate the monthly salary as required. Modules also provide the output:

* Table of income apart from salary
* General report on payment of wages
* Report on salary increase plan (quarterly and monthly)
* Administration panel – Utilities:
* Shared directory management:
  + List is updated once and shared throughout the entire system.
  + List assigned using the update function as well as the role of each section in order to unify the code list used for the whole staff.
  + The list of personnel management includes: List of sections, departments, production groups, titles, family relationships, ethnicity, degrees and certificates, qualification, types of contract, Salary Price...
* System security management:
  + Managing users who logging in the system.
  + Managing users and user groups.
  + Change password for users.
  + Update data for each group, each user.
  + Distribute rights to exploit the program for each group, each user.
* Insurance management

Application provider system in the management of social insurance. provide social insurance and health insurance card.

* Strict management processes collecting social insurance unification in the entire system.
* Strict control procedures for comparison and settlement of revenues for units participating in social insurance.
* Building a database system of centralization and uniformity throughout the system. Sharing information to the department concerned departments through
* Assessment management:

management assessment used to evaluate capability personnel in phase, towards the goals of the regime approved for employees such as: salary, bonuses, adjusted the working positions.

* Flexibility in setting assessments: The monthly, quarterly, years
* Flexibility set of evaluation purposes: increase salary, bonus
* General report, analyzing the results of periodic reviews
* Income management:

Income Management System order to meet the income distribution to staff correctly and quickly, reduce errors in the income distribution without affecting the rights and responsibilities of each staff

* Report management:

Management system overall written documents to and from the organization, capable of managing and tracking the movement of each import text from a text to the browser through the steps, processes and are finished

## 2.3 User Classes and Characteristics

[*Identify the various user classes that you anticipate will use this product. User classes may be differentiated based on frequency of use, subset of product functions used, technical expertise, security or privilege levels, educational level, or experience. Describe the pertinent characteristics of each user class. Certain requirements may pertain only to certain user classes. Distinguish the favored user classes from those who are less important to satisfy.*]



|  |  |  |
| --- | --- | --- |
| Number | Actor | Roles and Responsibilities, description |
| 1 | Department | * Supply working days: staff of department will summarize information about working days and provide for system. * Recruitment management: staff provides information about recruitment, recruitment form, promotion paper. * Update profile, training plan: Staff, lectures can update information in this field and manager of department can accept this info. * Supply rivalry result: staff collects information and then summits it to system. * System provide information about official lectures, outside lectures and personal salary to department |
| 2 | Educated Department | * Educated Department is part of department. * Besides, system provide information official lectures, outside lectures, personal salary table for it. |
| 3 | Account department | * Account department is part of department. * Besides, system provide salary table. |
| 4 | HR group | * Use all feature of system except income feature, Employee labor management. |
| 5 | Salary group | * Staff of salary group is responsible for payroll management and employee management. |
| 6 | Administrator | * Administrator can create account, and assign mission to staff. |

## 2.4 Operating Environment

* CPU: more than 2 CPU 3.0 GHz
* Display: Resolution 1024x768 or better.
* Operating system: Windows XP/Vista/7, Windows server 2003 or Windows server 2008
* Vietnamese keyboard: Unicode.
* Server-based activities. Net. Of Microsoft
* Hard disk space: 250 GB
* Memory: Min 4.000 MB free memory
* Network: WinSockets-compatible TCP/IP (if you are using the tcp protocol with the BFO Server) NetBIOS-compatible LAN (if you are using the netb protocol with the BFO Server) Lan network connection should be 100 mbit/sec or better.

## 2.5 Design and Implementation Constraints

[*Describe any items or issues that will limit the options available to the developers. These might include: corporate or regulatory policies; hardware limitations (timing requirements, memory requirements); interfaces to other applications; specific technologies, tools, and databases to be used; parallel operations; language requirements; communications protocols; security considerations; design conventions or programming standards (for example, if the customer’s organization will be responsible for maintaining the delivered software).*]

| **Constraint ID** | **Description** | **Type of Constrains** |
| --- | --- | --- |
|  | The system will use database of SQL server |  |
|  | Implement base on silver light and telerik, WCF (Window Communication Foundation) | Implement |
|  | Program and fix code on XML file or properties of XML file |  |
|  |  |  |

## 2.6 User Documentation

[*List the user documentation components (such as user manuals, on-line help, and tutorials) that will be delivered along with the software. Identify any known user documentation delivery formats or standards.*]

- The system will provide description file about system and user-guide in text file.

## 2.7 System Features

[*This template illustrates organizing the functional requirements for the product by system features, the major services provided by the product. You may prefer to organize this section by use case, mode of operation, user class, object class, functional hierarchy, or combinations of these, whatever makes the most logical sense for your product.*]

### System Feature 1

[*Don’t really say “System Feature 1.” State the feature name in just a few words.*]

Description and Priority

[*Provide a short description of the feature and indicate whether it is of High, Medium, or Low priority. You could also include specific priority component ratings, such as benefit, penalty, cost, and risk (each rated on a relative scale from a low of 1 to a high of 9).*]

|  |  |  |  |
| --- | --- | --- | --- |
| ID | Name | Description | Priority |
| HRM.Fe1 | System Management | Manage HRM system; include user management, authentication, configuration, etc. This feature will be hidden and filtered by users' | High |
| HRM.Fe2 | Recruitment Management | Take responsible for managing recruitment process. It includes interviewing, evaluating, managing probation, etc. This function will store | Normal |
| HRM.Fe3 | Employee Labor Contract Management | Supply information about contract: salary ratio, class, grade… Beside this feature help managing other problem (contract date, staff name…) | Normal |
| HRM.Fe4 | Insurance Information Management | Collect and synthesis information about type insurances, and manage premium. Beside, this feature base on salary table to update type insurance of staff, lectures. | Normal |
| HRM.Fe5 | Assessment Management | Synthesis information about work of staff, lectures, discipline, reward. And assessments will be updated in end of year. From this assessments help to count salary. | Normal |
| HRM.Fe6 | Attendance Tracking Management | Receive information about staff from Personal Information Management to manage working day, working hour. And supply these to count salary | Normal |
| HRM.Fe7 | Personal Information Management | It’s a big feature. It will supply information for all other features. And Employee Labor Contract Management feature update information of other features to management. | Normal |
| HRM.Fe8 | Payroll Management | Report some information or all information about staff, lectures, salary… | High |

Stimulus/Response Sequences

[*List the sequences of user actions and system responses that stimulate thebehavior defined for this feature. These will correspond to the dialog elementsassociated with use cases.*]

Functional Requirements

[*Itemize the detailed functional requirements associated with this feature. These arethe software capabilities that must be present in order for the user to carry out theservices provided by the feature, or to execute the use case. Include how theproduct should respond to anticipated error conditions or invalid inputs.Requirements should be concise, complete, unambiguous, verifiable, and necessary.Use “TBD” as a placeholder to indicate when necessary information is not yetavailable.*]

[*Each requirement should be uniquely identified with a sequence number or ameaningful tag of some kind.*]

REQ-1:

REQ-2:

### System Feature 2 (and so on)

# External Interface Requirements

## 3.1 User Interfaces

[*Describe the logical characteristics of each interface between the software product and the users. This may include sample screen images, any GUI standards or product family style guides that are to be followed, screen layout constraints, standard buttons and functions (e.g., help) that will appear on every screen, keyboard shortcuts, error message display standards, and so on. Define the software components for which a user interface is needed. Details of the user interface design should be documented in a separate user interface specification.*]

## 3.2 Hardware Interfaces

HRM systems be installed directly on the computer/laptop

## 3.3 Software Interfaces

* HRM runs on Microsoft SQL Server, Mysql, Oracle.
* Operating systems:
* Windows server 2003
* Windows server 2008
* Windows XP SP2
* Windows Vista
* Windows 7
* integrate to Microsoft Office 2003/2007

## 3.4 Communications Interfaces

[*Describe the requirements associated with any communications functions required by this product, including e-mail, web browser, network server communications protocols, electronic forms, and so on. Define any pertinent message formatting. Identify any communication standards that will be used, such as FTP or HTTP. Specify any communication security or encryption issues, data transfer rates, and synchronization mechanisms*]

# Other Nonfunctional Requirements

| **QA. ID** | **Type** | **Description** |
| --- | --- | --- |
|  | Performance | The system will run with high performance, events occur and the system must respond in a timely fashion from 2 to 4 seconds |
|  |  |  |
|  | Security |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

## 4.1 Performance Requirements

The system will run with high performance, events occur and the system must respond in a timely fashion from 2 to 4 seconds.

## 4.2 Security Requirements

This quality is very important for system because it will help the system to prevent or resist unauthorized access while providing access to legitimate users. That is presented two points of view as encode information, data and prevent hacker.

That all is showed in the product:

* Using newest information encode technology (encode information: username, password, data current between client and server)
* The product will release free defect to avoid lose information by hacker.

## Software Quality Attributes

* + 1. **Usability**

The interface will show clearly, easy to understand, and visually. The information is expressed science to create a favorable environment for user.

That all is showed in the product.

* To learn
  + Interface familiar, consistent
  + Clearly, science
  + The Menu and Button are placed suitable for user’ habit too easy to execute
* To use system effective
  + Reuse command or data already entered
  + Navigation support, comprehensive searching
* To recover from errors
  + Undo, cancel, recover from system failures

Forgotten passwords

* + 1. Scalability

The system will be easy to upgraded or added new module to the system.

* + 1. Modifiability

The system will be easy toadded, deleted and modified function.

* + 1. Availability

The system will provide 12/24availability from 7:00 AM to 19:00 PM to ensure data for workingif it is impacted from internal or external as crashed, omission, timing, no response, incorrect response.

## Other Requirement

[*Define any other requirements not covered elsewhere in the SRS. This might include database requirements, internationalization requirements, legal requirements, reuse objectives for the project, and so on. Add any new sections that are pertinent to the project.*]

# 5Appendix A: Glossary

[*Define all the terms necessary to properly interpret the SRS, including acronyms and abbreviations. You may wish to build a separate glossary that spans multiple projects or the entire organization, and just include terms specific to a single project in each SRS.*]

| **Thuật ngữ** | **Diễn giải** |
| --- | --- |
| FR.<abc>.<xxx> | Mã các functional requirementsthuộc dự án.  <abc>: Tên dự án  <xxx>: Số thứ tự functional requirements thuộc dự án. |
| UC.<abc>.<xxx> | Mã các usecase thuộc dự án.  UC.<abc>: Mã nhóm usecase thuộc dự án.  <xxx>: Số thứ tự usecase thuộc dự án. |
| BR.<abc>.<xxx> | Mã các business rule thuộc dự án.  <abc>: Tên dự án  <xxx>: Số thứ tự business rule thuộc dự án. |
| BC.<abc>.<xxx> | Mã các business constraints  <abc>: Tên dự án  <xxx>: Số thứ tự business constraints thuộc dự án. |
| TC.<abc>.<xxx> | Mã các technical constraints  <abc>: Tên dự án  <xxx>: Số thứ tự technical constraints thuộc dự án. |
| QA.<abc>.<xxx> | Mã các quality attributes  <abc>: Tên dự án  <xxx>: Số thứ tự quality attributes thuộc dự án. |
| R.<abc>.<xxx> | Mã các report  <abc>: Tên dự án  <xxx>: Số thứ tự report thuộc dự án. |
| F.<abc>.<xxx> | Mã các form  <abc>: Tên dự án  <xxx>: Số thứ tự form thuộc dự án. |

# 6Appendix B: Analysis Models

[*Optionally, include any pertinent analysis models, such as data flow diagrams, class diagrams, state-transition diagrams, or entity-relationship diagrams*.]

# 7Appendix C: Issues List

[*This is a dynamic list of the open requirements issues that remain to be resolved, including TBDs, pending decisions, information that is needed, conflicts awaiting resolution, and the like.*]