Human Resource Requirements Specification

Version 1.0

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Human Resources is the organizational function that deals with the people and issues related to people such as recruiting and hiring employees, onboarding employees, performance management, training, organization development and culture, and advising senior staff about the impact on people of their financial, planning, and performance decisions on the people in the organization. This is made up of the work force of an organization, businesses, and other sector, or economy.

A human resource department performs human resources management such as compliance to the labor law and employment standards, administration of employee benefits and recruitment.

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# Executive Summary

## Project Overview

This paper deals with the process of identifying the employees, recording their attendance hourly for their effective payable hours or days. This paper should maintain the records of each and every employee and their time spend in to company, which can be used for performance appraisal. Based on that transfer, removal, promotion can be done.

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## Purpose and Scope of this Specification

In scope

* Add new employee
* Update/edit employee details
* Recruitment of new employee.
* Recording of time logs of the employee/ Admin.
* Training for the employee.
* Promotion for the employee.
* Updating of employees.
* Termination of employee
* Payroll
* Leave Management System

Out of Scope

The following items are out of scope:

* Job Posting
* Industrial relation

# Product/Service Description

The aim of this project is to develop a web based that allows the client, Wine Distillery, to streamline their human resource tasks and manage their employees in more effective and efficient way. The system will ensure the effective utilization and maximum development of human resource, generate and maintain human resource records and allows proper interaction and timely access to accurate information to those who require the information.

## Product Context

Human Resource management systems support activities such as identifying potential employees, and maintaining records of existing employees. HR systems help senior management (Admin) to identify the manpower requirements in order to meet the organization’s long-term business plans and strategic goals. Middle management, also part of the Administrator’s, uses Human resource systems to monitor and analyze the recruitment.

## User Characteristics

* Admin- knowledge and expertise in Human Resources
* should possess foundation on the functions of human resources successful
* Admin have a zeal to update their knowledge on latest practices and trends in human resources.
* knowledge and expertise, they deal with the daily challenges that arise in the organization.
* Employee-personal and work related outcome
* High internal [motivation](http://hrmpractice.com/motivation/) employees work more and with joy.
* High [satisfaction](http://hrmpractice.com/satisfaction/): They get satisfied with their jobs following the fulfillment of needs
* High work quality: Employees perform their duties for producing high quality goods and service.
* Low [absenteeism](http://hrmpractice.com/absenteeism/) and turnover: If core job features and psychological states behave positively, workers show low [absenteeism](http://hrmpractice.com/absenteeism/) and turnover also.

## Constraints

* Time

Time is a major constraint since we have a limited time period to complete our project. Thus, the duration period that can be reserved for testing process will clearly affect the result.

* Data

Since HR is composed of many modules running concurrently and passing data to each other during the run, minimizing the amount of data being transferred between modules is a goal in the sense of data constraint.

* Hardware Device Capabilities

Our project is partially dependent on hardware devices. For example it is dependent on CPU capabilities since we are trying to implement a real-time system. During both functional and behavioral testing, since we use hardware devices that we can afford, testing and surely the future of the project will be affected.

* Test Results over Costs

Test results over cost ratio are also another constraint in testing. If a test is not useful as it costs, it will be postponed and more useful tests will be regarded as more important. This manner will also affect the testing procedure.

* Security

The security for the user is done only by the use of software generated pin and not by the use of hardware authentication.

## Dependencies

List dependencies that affect the requirements.

* Supply Chain Management Systems

The Human Resource module needs to integrate to Supply Chain Management Systems because of their employee records. Aligning recruitment practices among the supply chain firms. Identifying training needs and objectives specifically for supply chain positions, and designing training to meet those needs.

* Accounting and Finance

The data Finance gathers and controls (performance measurement data) is needed by HR to make the best financial decisions. Without a source of relevant real-time data (Finance) HR depends on inaccurate projection models when requesting funds for programs; making it very difficult to provide viable return on investment data.  Performance measurement data is crucial information that is required regularly for HR to keep the company running smoothly while exceeding all performance and customer satisfaction goals.

# Requirements

* Employee Information

To manage and store employee records, and documentation.

* Employee leave

Manage leave benefits, and track balance through the payroll leave module.

* Payroll

Automatically compute the number of work days to ensure timely government compliance.

* Attendance

To track attendance and account for tardiness. Absences and overtime.

* Recruitment

Use the module to post job openings, schedule interviews for a new employee.

* Employee Loan

Process and leave usage for each member of the team with the payroll and benefits module.

* Employee Training

Use to integrate modules to schedule training session, track performance.

Priority Definitions

The following definitions are intended as a guideline to prioritize requirements.

* Employee Information
* Register
* Add Employee
* Edit Employee
* Employee Portal
* Job History
* Employee leave
* Employee Leave
* Leave Application
* Payroll
* Number of working days
* Attendance detail
* Leave detail
* Attendance
* Clock In/Out
* Time Reporting
* Time Tracking
* Overtime Tracking
* Workforce Scheduling
* Paid Time Off (PTO)
* Absence Management
* Holidays Calendar
* Recruitment/Hiring
* Job Descriptions
* Applicant Evaluation
* Candidate Pre-Screening
* Job Offer Extension
* Background Check
* Employee Loan
* Employee loan
* Loan Application
* Training
* Employee Training
* Training Event

## Functional Requirements

| Req# | Requirement | Comments | Priority | Date Rvwd | Reviewed / Approved |
| --- | --- | --- | --- | --- | --- |
| HR\_1 | The system should record all the details of new applicant |  | 3 | 11/20/18 | Aime Granados |
| HR\_2 | The system should provide applicant to edit his/her profile details. |  | 2 | 11/20/18 | Aime Granados |
| HR\_3 | The system should compute the number of employee working days |  | 2 | 11/20/18 | Aime Granados |
| HR\_4 | The system should manage the attendance and leave application of employee |  | 2 |  |  |
| HR\_5 | The system should recruit and schedule interview of the new employee |  | ~~2~~  3 |  |  |

## User Interface Requirements

* User Requirements

The user needs the capability to search on personnel across the entire company by pre-defined skill sets.

* Process Specialty Requirement

To ensure complete skills and training information are captured among the legacy systems, a data model shall be created.

* Process Interface Requirement

Skills and training information from all company locations will be available to all other company locations.

* Test Process Requirement

Test HR records for verifying the WINE system will consist of a special set of personnel records at each company location specifically created with artificial data.

* Product Requirement

The WINE system shall retrieve basic identifying information for all employees who meet the pre-determined skills and training criteria.

## Usability

* Usefulness

To understand the usefulness of the HR System.

* HR Information System

Provides a method by which an organization can collect, maintain analyze number of employee workdays.

* Employee details

Can update any achieve field in the details section simply by editing the field and submit changes to the database.

* Leave

Leave feature can view leave balances request leave edit or delete their leave request and view their leave history.

## Performance

* Software that provides recruiting, position management, onboarding, and performance management for new employee.
* Track, evaluate and manage the leave, attendance, and behavior of your employees more effectively.
* Performance management software that nurtures communication and establishes a sense of purpose for employees.
* Employee feedback and performance solution that lets you easily set goals, share ideas, and get real-time feedback.

### Capacity

Employee- measuring as part of the balanced scorecard maybe done assessing what employee can do.

Process- measuring as part of the scorecard focuses less on people and more on the system and dynamic within the firm.

Productivity- generally takes the form of output divided by the input.

### Availability

* Educational backgrounds of HR workers vary considerably and reflect the diversity of duties and levels of responsibility. (They are also dependent on where you want to live and work and any competition that may exist in that marketplace.)
* Certification and previous experience are assets for most HR specialties and are essential for more advanced positions, including managers, arbitrators, and mediators.
* Having both a college degree and an earned certification can open the door to the best job opportunities.

### Latency

* Interaction delay-is how long the user will wait for response from the system.
* Human response time- is when a system delay becomes noticeable to a user.
* Network propagation delay-is how long it takes for a command to cross the network and get the reply

## Manageability/Maintainability

### Monitoring

A common mistake that many companies make with HR is failing to consider ongoing HRIS maintenance after implementation. Many companies simply assume that the human resources department will take care of Wine maintenance, without allotting any additional time or staff to the department to help with this (sometimes monumental) task.

Failing to properly plan for HR maintenance can have disastrous consequences such as information leaks or losses, so it is important to make sure a plan is in order before implementation is even complete. Understanding when to perform maintenance, what maintenance is necessary, and who should perform tasks can help to keep the HR running smoothly.

### Maintenance

At least once a month, maintenance should be done on HR systems to fix bugs in coding and configuration and to apply vendor maintenance upgrades. These corrections and upgrades may be done by an HR or by the vendor, depending on the HR contract and the organizational structure. As changes are made to the system, employees and managers may need to be trained to adapt to the changes, so training costs and additional staffing needs should be factored in for this as well.

### Operations

* Recruitment and hiring
* Process new hires and employee terminations
* Ensure implementation company policy
* Develop and enhance company recruitment strategy including job optimization, recruitment brand development, talent acquisition and resourcing
* Manage the recruitment life cycle from inception to completion
* Provide solutions in the resolution of recruitment-related matters
* Ensure a continuous improvement and ‘best practice’ approach to managing recruitment systems
* Analyze recruitment trends and contribute to the development of corporate recruitment, remuneration and other associated policies
* Develop staff retention initiatives and strategies.

## System Interface/Integration

The majority of company has their **human resources software** share data directly with their Ready Set solution. This enables the synchronization of employee data on a daily basis. The bi-directional interface significantly benefits HR, administrative and clinic employees by:

* Ensuring current employee data
* Reducing double-entry errors
* Eliminating paperwork
* Delivering efficient EMR operations

### Network and Hardware Interfaces

* **Hardware:** Component devices that are building blocks of computing device.
* **Software:** Any set of machine-readable instructions which directs a computer's processor to perform specific operations.
* **Network:** A computer network or data network is a telecommunications network which allows computers to exchange data.
* **Human Resources:** Is the set of individuals who make up the workforce of an organization.

### Systems Interfaces

Example systems interface requirements:

1. System1-to-System2 Interface

The <external party> will create and send a fixed length text file as an email attachment to [System2mail@u.washington.edu](mailto:heppsmai@u.washington.edu) to be imported into the System2 system for payroll calculation. This file must be received on EDIT day by 4:00 PM in order to be processed in the EDIT night run. The requirements below document the file specifications, data transfer process, and specific schedule. This file is referred to as "FileName" in this document.

File Structure and Format

* 1. The FileName file is a fixed length text file.
  2. The FileName file is an unformatted ASCII file (text-only).
  3. The FileName file contains a batch totals record and several detail records.

File Description: Batch Totals Record

* 1. The batch totals record can be placed at the beginning, in the middle, or at the end of the file.
  2. The batch totals record contains the following:

Record Type (value: XA)

Process Type (value: A)

Batch Number (3 digit number assigned by Payroll Dept.)

Origin Code (AIG)

Total number of detail records

Total deduction amount

File Description: Detail Records

* 1. The FileName file contains a row for each record meeting xxx criteria.
  2. Each row in the FileName file contains the following fields, comma-delimited and encased in double-quotes where the data includes commas or spaces:
* Employee Id
* Record Type
* Process Date (MMDDYY)
* XYG Number
* Element Code
* Amount
* Amount Sign
* Year Flag
* Total Amount
* Total Amt Sign

## Security

### Protection

A combination of written policy and effective use of your system's security features is needed to manage issues of data integrity and privacy.

Because employee records are increasingly maintained in computer files, the traditional recordkeeping policies and practices need to be reviewed and updated in light of these technological times. Often more complete than paper records, computer records are full of information that needs to be protected from inaccurate actions as well as from unwarranted use. Three areas, in particular, need to be re-examined: employee right to privacy, management in formation and legal restrictions.

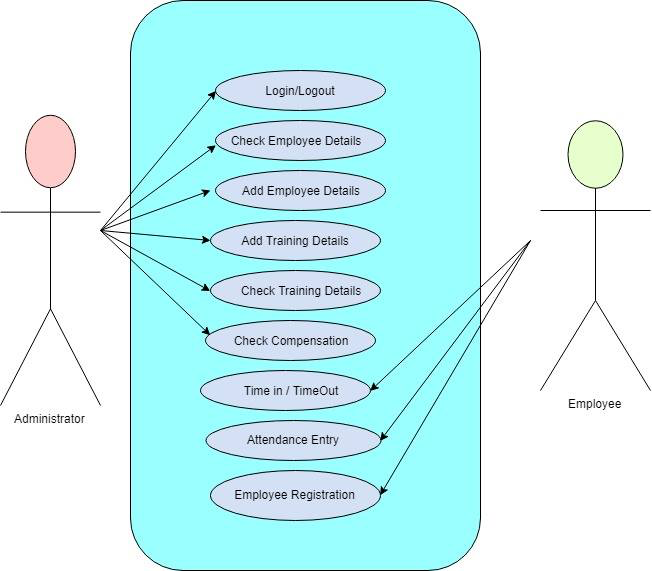
Employee right to privacy. An electronic system makes it easier to produce lists, combine data and share information. These very qualifies can contribute to a breach of privacy. What constitutes confidential information should be defined in a company privacy policy. For example, some employees may prefer that their personal addresses and telephone numbers not be published on a list. Medical information, for instance, should always be carefully protected.

Management information. Businesses generally want to be close-mouthed about their affairs because of competition and actions management is considering. A primary goal of automation is the ability to produce better management information, but safeguards should exist to protect both he data and ability to produce reports. Legal restrictions. The type of data that is considered confidential varies from state to state; the HR department should have a current list of the state requirements for employee record-keeping. Safeguards for data entry and use of the information can be handled by written policy and security.

## Data Management

It is the HR responsibility to maintain accurate employee records. Both state and federal law apply to the maintenance of employment histories, which include, but are not limited to employment related actions such as recruitment and selection, promotion, classification, compensation, performance, discipline, and training. Accuracy of employment data and dates maintained in these records determine an employee’s eligibility for university programs and services. This file is maintained under conditions, which ensure the integrity and safe keeping of the file. Upon reasonable notice an employee may inspect their official personnel file Portability.

# User Scenarios/Use Cases



Use case: Login/logout

Description: The admin must login/logout to his/her account

Actor: Admin

Precondition: Their must have account

Post condition: Admin

Use case: Check Employee details

Description: The Admin must check the employee details

Actor: admin

Precondition: The employee provide their information details

Post condition: Employee recorded into file

Use case: Add Employee details

Description: The admin check employee details

Actor: admin

Precondition: There must be vacancy to add employee

Post condition: employee already accepted

Use case: Add Training details

Description: The admin provide trainings details for the employee

Actor: admin

Precondition: General training development

Post condition: employee already accepted

Use case: Check Training Details

Description: The admin post trainings in every department

Actor: admin

Precondition: Training employee involvement

Post condition: employee already accepted

Use case: Check Compensation

Description: The admin provide benefits for the employee

Actor: admin

Precondition: The employees have to understand their contract of the company.

Post condition: employee accept the term of condition of the contract

Use case: Time in/ Time out

Description: The employee work schedule

Actor: Employee

Precondition: The employee provide number of working hours

Post condition: employee allocating working hours.

Use case: Attendance Entry

Description: Attendance and absent of employee

Actor: Employee

Precondition: Managing employee performance

Post condition: managing flexible employment

Use case: Employee Registration

Description: The employee Register their information

Actor: Employee

Precondition: Admin accept employee details

Post condition: employee successfully registered

# Deleted or Deferred Requirements

Identify any requirements that have been deleted after approval or that may be delayed until future versions of the system. For example:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Req# | Business Requirement | Status | Comments | Pri | Date Rvwd | SME Reviewed /Approved |
| BR\_LR\_01 | The system conduct an assessment of the employee performance |  | All employee should submit their performance assessment form on time | 1 | 11/20/18 | Aime Granados |
| BR\_LR\_02 | The system improve performance assessment |  | Target: completed 100% | 3 | 11/20/18 | Aime Granados |
| BR\_LR\_03 | The system should conduct training activities |  | To conduct training modules every department | 1 | 11/20/18 | Aime Granados |

# 

# Requirements Confirmation/Stakeholder sign-off

Include documentation of the approval or confirmation of the requirements here. For example:

|  |  |  |
| --- | --- | --- |
| Meeting Date | Attendees (name and role) | Comments |
| August 25,2018 | Planning   * Mark Villafranca * Aime Granados * Adrian Lopez * Jaymar Enconado * Robin Villaruel * Ian Ireneo Oropesa * Nickey Shene Rosales * Reynabeth Balboa * Edgar Buño | Our team accomplished the first meeting and assigned the roles for each team members. |
| September 1,2018 | Design   * Ian Ireneo Oropesa Jr * Robin Villaruel | The User Interface accomplished. |
| September 3, 2018 | Programming   * Jay mar Enconado | The login for both the administrator and employee of the system has been made. |
| September 11, 2018 | Test Script   * Robin Villaruel * Reynabeth Balboa * Nickey Shene Rosales * Edgar Buño * Aime Granados * Adrian Lopez * Mark Villafranca * Ian Ireneo Oropesa, Jr. | The test script of the first module, which is for the login finished. |
| October 5, 2018 | Test Script   * Robin Villaruel * Reynabeth Balboa * Nickey Shene Rosales * Edgar Buño * Aime Granados * Adrian Lopez * Mark Villafranca | The test script for the recruitment and registration module has finished. |
| October 6, 2018 | Programming   * Jay mar Enconado   Web Design   * Ian Ireneo Oropesa Jr. | The main functions of the system have been programmed. |
| October 12,2018 | Test Script   * Robin Villaruel * Reynabeth Balboa * Nickey Shene Rosales * Edgar Buño * Aime Granados * Adrian Lopez * Mark Villafranca | The attendance, training details, and employee details has made. |
| October 20, 2018 | Documentation   * Aime Granados * Adrian Lopez | The documentation process has been started. |
| October 26,2018 | Programmer   * Jay mar Enconado   Database   * Mark Villafranca * Edgar Buño | The development of the system continues. |
| November 6, 2018 | Test Cases   * Robin Villaruel * Reynabeth Balboa * Nickey Shene Rosales | The testers started testing with the use of Selenium. |
| November 13, 2018 | Test Cases   * Robin Villaruel * Reynabeth Balboa * Nickey Shene Rosales | The testers continue testing with the use of Selenium. |
| November 22, 2018 | Data Dictionary   * Edgar Buño * Mark Villafranca | The data dictionary of the system has been made. |
| November 27, 2018 | Test Case   * Robin Villaruel * Reynabeth Balboa * Nickey Shene Rosales | The testers test for the polishing of the system functions. |
| December 4, 2018 | Programmer   * Jay mar Enconado   Database   * Edgar Buño * Mark Villafranca   Test Case   * Robin Villaruel * Reynabeth Balboa * Nickey Shene Rosales | The team conducted a meeting for the project completion. |
| December 11, 2018 | Programmer   * Jay mar Enconado   Test Case/Bug Reports   * Robin Villaruel * Reynabeth Balboa * Nickey Shene Rosales   Documentation   * Aime Granados * Adrian Lopez | The final output has been checked by the instructor. |

APPENDIX

The appendixes are not always considered part of the actual Requirements Specification and are not always necessary. They may include

* Sample input/output formats, descriptions of cost analysis studies, or results of user surveys;
* Supporting or background information that can help the readers of the Requirements Specification;
* A description of the problems to be solved by the system;
* Special packaging instructions for the code and the media to meet security, export, initial loading, or other requirements.

When appendixes are included, the Requirements Specification should explicitly state whether or not the appendixes are to be considered part of the requirements.

1. Definitions, Acronyms, and Abbreviations

Define all terms, acronyms, and abbreviations used in this document.

1. References

List all the documents and other materials referenced in this document.

1. Requirements Traceability Matrix

The following trace matrix examples show one possible use of naming standards for deliverables (FunctionalArea-DocType-NN). The number has no other meaning than to keep the documents unique. For example, the Bargaining Unit Assignment Process Flow would be BUA-PF-01.

For example (1):

| **Business Requirement** | **Area** | **Deliverables** | **Status** |
| --- | --- | --- | --- |
| BR\_LR\_01  The system should validate the relationship between Bargaining Unit/Location and Job Class---Comments: Business Process = "Assigning a Bargaining Unit to an Appointment" (Priority 1) | BUA | BUA-CD-01  Assign BU Conceptual Design | Accepted |
| BUA-PF-01  Derive Bargaining Unit-Process Flow Diagram | Accepted |
| BUA-PF-01  Derive Bargaining Unit-Process Flow Diagram | Accepted |
| BR\_LR\_09  The system should provide the capability for the Labor Relations Office to maintain the job class/union relationship.---Comments: Business Process = "Maintenance" (Priority 1) | BUA | BUA-CD-01  Assign BU Conceptual Design | Accepted |
| BUA-PF-02  BU Assignment Rules Maint Process Flow Diagram | ReadyForReview |

For example (2):

| **BizReqID** | **Pri** | **Major Area** | **DevTstItems DelivID** | **Deliv Name** | **Status** |
| --- | --- | --- | --- | --- | --- |
| BR\_LR\_01 | 1 | BUA | BUA-CD-01 | Assign BU Conceptual Design | Accepted |
| BR\_LR\_01 | 1 | BUA | BUA-DS-02 | Bargaining Unit Assignment DB Modification Description | Accepted |
| BR\_LR\_01 | 1 | BUA | BUA-PF-01 | Derive Bargaining Unit-Process Flow Diagram | Accepted |
| BR\_LR\_01 | 1 | BUA | BUA-UCD-01 | BU Assign LR UseCase Diagram | ReadyForReview |
| BR\_LR\_01 | 1 | BUA | BUA-UCT-001 | BU Assignment by PC UseCase - Add Appointment and Derive UBU | Reviewed |
| BR\_LR\_01 | 1 | BUA | BUA-UCT-002 | BU Assignment by PC UseCase - Add Appointment (UBU Not Found) | Reviewed |
| BR\_LR\_01 | 1 | BUA | BUA-UCT-006 | BU Assignment by PC UseCase - Modify Appointment (Removed UBU) | Reviewed |
| BR\_LR\_09 | 1 | BUA | BUA-CD-01 | Assign BU Conceptual Design | Accepted |
| BR\_LR\_09 | 1 | BUA | BUA-DS-02 | Bargaining Unit Assignment DB Modification Description | Accepted |
| BR\_LR\_09 | 1 | BUA | BUA-PF-02 | BU Assignment Rules Maint Process Flow Diagram | Accepted |
| BR\_LR\_09 | 1 | BUA | BUA-UCD-03 | BU Assign Rules Maint UseCase Diagram | Reviewed |
| BR\_LR\_09 | 1 | BUA | BUA-UCT-045 | BU Assignment Rules Maint: Successfully Add New Assignment Rule | Reviewed |
| BR\_LR\_09 | 1 | BUA | BUA-UCT-051 | BU Assignment Rules MaintUseCase: Modify Rule | Reviewed |
| BR\_LR\_09 | 1 | BUA | BUA-UCT-053 | BU Assignment Rules MaintUseCase - Review Assignment Rules | Reviewed |
| BR\_LR\_09 | 1 | BUA | BUA-UCT-057 | BU Assignment Rules MaintUseCase: Inactivate Last Rule for a BU | Reviewed |
| BR\_LR\_09 | 1 | BUA | BUA-UI-02 | BU AssignRules Maint UI Mockups | ReadyForReview |
| BR\_LR\_09 | 1 | BUA | BUA-TC-021 | BU Assignment Rules Maint TestCase: Add New Rule (Associated Job Class Does Not Exist) - Success | ReadyForReview |
| BR\_LR\_09 | 1 | BUA | BUA-TC-027 | BU Assignment Rules Maint TestCase: Modify Rule - Success | ReadyForReview |
| BR\_LR\_09 | 1 | BUA | BUA-TC-035 | BU Assignment Rules Maint TestCase: Add New Rule (Associated Job Class Does Not Exist) - Error Condition | ReadyForReview |
| BR\_LR\_09 | 1 | BUA | BUA-TC-049 | BU Assignment Rules Maint TestCase: Modify Rule - Error Condition | ReadyForReview |

For example (3):

| **BizReqID** | **CD01** | **CD02** | **CD03** | **CD04** | **UI01** | **UI02** | **UCT01** | **UCT02** | **UCT03** | **TC01** | **TC02** | **TC03** | **TC04** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| BR\_LR\_01 |  |  | X |  | X |  | X |  |  | X |  | X |  |
| BR\_LR\_09 | X |  |  | X |  | X |  |  | X |  | X |  | X |
| BR\_LR\_10 | X |  |  | X |  |  |  |  | X |  | X |  |  |
| BR\_LR\_11 |  | X |  |  |  |  |  |  |  |  |  |  |  |

1. Organizing the Requirements

This section is for information only as an aid in preparing the requirements document.

Detailed requirements tend to be extensive. Give careful consideration to your organization scheme. Some examples of organization schemes are described below:

By System Mode

Some systems behave quite differently depending on the mode of operation. For example, a control system may have different sets of functions depending on its mode: training, normal, or emergency.

By User Class

Some systems provide different sets of functions to different classes of users. For example, an elevator control system presents different capabilities to passengers, maintenance workers, and fire fighters.

By Objects

Objects are real-world entities that have a counterpart within the system. For example, in a patient monitoring system, objects include patients, sensors, nurses, rooms, physicians, medicines, etc. Associated with each object is a set of attributes (of that object) and functions (performed by that object). These functions are also called services, methods, or processes. Note that sets of objects may share attributes and services. These are grouped together as classes.

By Feature

A feature is an externally desired service by the system that may require a sequence of inputs to affect the desired result. For example, in a telephone system, features include local call, call forwarding, and conference call. Each feature is generally described in a sequence of stimulus-response pairs, and may include validity checks on inputs, exact sequencing of operations, responses to abnormal situations, including error handling and recovery, effects of parameters, relationships of inputs to outputs, including input/output sequences and formulas for input to output.

By Stimulus

Some systems can be best organized by describing their functions in terms of stimuli. For example, the functions of an automatic aircraft landing system may be organized into sections for loss of power, wind shear, sudden change in roll, vertical velocity excessive, etc.

By Response

Some systems can be best organized by describing all the functions in support of the generation of a response. For example, the functions of a personnel system may be organized into sections corresponding to all functions associated with generating paychecks, all functions associated with generating a current list of employees, etc.

By Functional Hierarchy

When none of the above organizational schemes prove helpful, the overall functionality can be organized into a hierarchy of functions organized by common inputs, common outputs, or common internal data access. Data flow diagrams and data dictionaries can be used to show the relationships between and among the functions and data.

Additional Comments

Whenever a new Requirements Specification is contemplated, more than one of the organizational techniques given above may be appropriate. In such cases, organize the specific requirements for multiple hierarchies tailored to the specific needs of the system under specification.

There are many notations, methods, and automated support tools available to aid in the documentation of requirements. For the most part, their usefulness is a function of organization. For example, when organizing by mode, finite state machines or state charts may prove helpful; when organizing by object, object-oriented analysis may prove helpful; when organizing by feature, stimulus-response sequences may prove helpful; and when organizing by functional hierarchy, data flow diagrams and data dictionaries may prove helpful.