Document Name

ONLINE BUS RESERVATION SYSTEM

Initial Plan Report

Version

1.1

Delivery Date

01.03.2002

Prepared by

POKEMON TEAM

Bilgehan TURAN
Candaş BOZKURT
Güven FİDAN
Meltem YILDIRIM

CHANGE HISTORY

Date Document	Version	File Name	Format	Status
26.02.2002	1.0	OBRS-Initial Plan-v1.0	MS Word 2000 Document	Created
01.03.2002	1.1	OBRS-Initial Plan-v1.1	MS Word 2000 Document	Revised

TABLE OF CONTENTS

Paragraph **Page**

1. OVERVIEW 1

1.1 PROJECT SUMMARY 1

1.1.1 Purpose, Scope and Objectives 1

1.1.1.1 Purpose 1

1.1.1.2 Scope 1

1.1.1.3 Objectives 2

1.1.2 Assumptions, Constraints 2

1.1.2.1 Assumptions 2

1.1.2.2 Constraints 3

1.1.3 Project Deliverables 3

1.1.4 Schedule and Budget Summary 4

1.2 EVOLUTION OF THE PLAN 4

2. REFERENCES 5

3. DEFINITIONS 6

3.1 DEFINITIONS 6

3.2 ABBREVIATIONS 6

4. PROJECT ORGANIZATION 7

4.1 EXTERNAL INTERFACE 7

4.1.1 Acquirer 7

4.1.2 Quality Group 7

4.2 INTERNAL STRUCTURE 7

4.3 ROLES AND RESPONSIBILITIES 8

4.3.1 Internal Roles: 8

4.3.2 External Roles: 9

5. MANAGERIAL PROCESS PLAN 10

5.1 PROJECT START-UP PLAN 10

*5.1.1 Estimation Plan ..... **Hata! Yer işareti tanımlanmamış.***

5.1.1.1 Size Estimation ..... **Hata! Yer işareti tanımlanmamış.**

5.1.1.2 Effort Estimation ..... **Hata! Yer işareti tanımlanmamış.**

5.1.1.3 Cost Estimation ..... **Hata! Yer işareti tanımlanmamış.**

5.1.2 Staffing Plan 10

5.1.3 Resource Acquisition Plan 10

5.1.4 Project Staff Training Plan 11

APPENDIX: PROJECT SCHEDULE SUMMARY GANTT CHART 20

List of Tables

Table **Page**

TABLE 1 - PROJECT MILESTONES 3
TABLE 2 - QUALITY GROUP 7
TABLE 3 - INTERNAL ROLES AND RESPONSIBILITIES 8
TABLE 4 - EXTERNAL ROLES AND RESPONSIBILITIES 9
TABLE 5 - FUNCTION POINTS COMPLEXITY WEIGHTS .....**HATA! YER İŞARETİ TANIMLANMAMIŞ.**
TABLE 6 – COMPLEXITY LEVELS OF FUNCTIONS .....**HATA! YER İŞARETİ TANIMLANMAMIŞ.**
TABLE 7 – UNADJUSTED FUNCTION POINTS CALCULATION .....**HATA! YER İŞARETİ TANIMLANMAMIŞ.**
TABLE 8 - INFLUENCE FACTORS AND CALCULATION OF ADJUSTED FUNCTION POINTS **HATA! YER İŞARETİ TANIMLANMAMIŞ.**
TABLE 9 – MODES OF DIFFICULTY .....**HATA! YER İŞARETİ TANIMLANMAMIŞ.**
TABLE 10 – DISTRIBUTION OF THE EFFORT ESTIMATION OVER THE PROJECT SCHEDULE ..... **HATA! YER İŞARETİ TANIMLANMAMIŞ.**
TABLE 11 - DISTRIBUTION OF THE COST ESTIMATION OVER THE PROJECT SCHEDULE .. **HATA! YER İŞARETİ TANIMLANMAMIŞ.**
TABLE 12 - SOFTWARE RESOURCES 10
TABLE 13 - HARDWARE RESOURCES 11

1. OVERVIEW

This document is prepared in accordance with the Institute of Electrical and Electronics Engineers (IEEE) Recommended Practice for Software Project Management Plan, IEEE Std 1058-1998 [2]. But

1.1 Project Summary

1.1.1 Purpose, Scope and Objectives

1.1.1.1 Purpose

The purpose of this project is to develop a web-based application, *OBRS (Online Bus Reservation System)*, which will establish the automation of the bus reservation activities on the web.

Today, people (travelers) can make their reservations manually by phone, or with face-to-face interactions by the agents. To manage these reservation activities by the bus firms, some systems such as, a phone-based (agents informing each other) system, or a client-server application are established. This kind of reservation process has some limitations and burdens for both travelers and the bus firms. OBRS will support an interactive environment by exploiting the current technology, where bus firms and travelers can cooperate.

1.1.1.2 Scope

The software product to be developed in the scope of this project is an "Online Bus Reservation System", which will be a web based application supporting an interactive environment for the bus firms and the travelers. The system will be designed in a portal logic, and serve the users (travelers) to get necessary information about the bus firms, and also to make online seat reservation for the desired bus firm that is traveling to the desired location.

User interaction in this system will be provided via web pages. User will choose the parameters for necessities from these pages, forms, then and the system will generate the reservation information (if possible, if there is empty seat for example) and fix the reservation according to the parameters specified by the user. Reservation information details will be presented to the user in tabular form on a web page.

Bus firms are responsible for the updating of the traveling information; they will make the data entry online, by using web pages. The system will provide appropriate forms, interfaces to collect and store these data. A relational database, external to the development, is going to be used for storing relevant data.

The development environment will be Java 2 environment. Therefore, Java 2 Standard Edition Runtime Environment shall be available in order to use the system efficiently.

1.1.1.3 Objectives

At the end of the project, OBRS will support the following functions:

- Make real-time operations on reservations.
- Assure data consistency.

Travelers can:

- Access the information of the reservation system from anywhere and at anytime.
- See the date, time, cost, and routing information of different bus firms.
- Reserve the seats via the bus layout where they want to travel.

Firms can:

- Manage their reservation activities from anytime and at anyplace by a web browser.
- Inform up to date information to the customers about bus schedule, cost, and target.

1.1.2 Assumptions, Constraints

1.1.2.1 Assumptions

It is assumed that:

- Database of the bus firms (include date, time, route, cost, bus properties, …) are gained from the customer. Additional requirements will be accepted or adjusted by the customer.
- The customer will provide necessary feedback to aid the group's efforts.
- All bus firms are assumed to be registered to Ministry of Communications database.
- Update of the firm database is made by authorized person.
- Firms update the database for the reservations made by their traditional system (telephone, face-to-face,…) to prevent the duplications.
- All users have Internet connection.
- All the users are responsible for the truth of their information.
- All users have the environment that is suitable to run the applications developed by the Java technologies.
- The man-hour rate of the group members is assumed to be $ 10.
- Credit card verification will not be made during the transaction process.
- The preparation of the invoice would be made according to the travelers' preferences.
- Other reservation constraints are supplied by the bus firms (reservation deadline, sitting plan…).

1.1.2.2 Constraints

- The application program will work on all platforms that support internet browser.
- Schedule was given from the customer and it will be obeyed strictly by group members.
- There will be no income for the OBRS.
- IEEE software engineering standards will be implemented during the project.
- Project group consists of four Information Systems Graduate Program students, who employee of different organizations, try to work together for this project. This structure of the project brings its own difficulties, namely the communication between group members is a major problem. This limits the overall efficiency of the project flow, and implies the need for appropriate distribution of workload between the group members.

1.1.3 Project Deliverables

Schedule of deliverables with respect to the stated delivery dates on the IS 502 course web page is given in Table 1. The documents will be delivered in Microsoft Word 2000 format.

Table 1 - Project Milestones

PRODUCT NAME	DESCRIPTION	DELIVERY DATE
Problem Statement	Define the problem	Feb, 18 2002
Initial Plan	Determine the managerial and technical process	Feb, 26 2002
Reviewed Initial Plan	Updated Version of Initial Plan	March, 1 2002
SRS Document	Describe the functional and global requirements of the system	March, 17 2002
Reviewed SRS Document	Updated Version of SRS	March, 22 2002
SPMP Document	Detailed Plan	March, 31 2002
Reviewed SPMP Document	Updated Version of SPMP	April, 05 2002
SDD Document	Describe the design goals, HW-SW platforms, data management, etc.	April, 28 2002
Reviewed SDD Document	Updated Version of SDD	May, 03 2002
Delivery of Product		May, 19 2002
User Manual	Guide for using system by the customer	June, 09 2002
Final product	Final Product Demonstration	June, 09 2002

All deliverables shall be submitted to the instructor in paper and to the customer in electronic format. Final Product is submitted to the instructor in hard and soft copy with all codes and documents.

1.1.4 Schedule and Budget Summary

Schedule of all work products with respect the dates on the IS502 course web page is given in Table1. This project is prepared for IS502 course, in this respect budget seems not applicable so for. However, a cost estimation is made in section 5.1.1, based on the man-hour rate of the group member is assumed to be $ 10 as mentioned in section 1.1.2.1.

Project Schedule summary is shown as a Gantt Chart provided in Appendix ; it depicts the project activities.

Review work activity is taken extra time except for developing the product and the documents. This item isn't shown in above table, but 2 hours for review the other group's document and 1 hour for our document revision are joined the duration time of each activity. Printing/paper cost, hardware/software supplying cost or communication cost, which consist of material cost of the project, is not considered.

1.2 Evolution of The Plan

This document is a part of SPMP and there may be change of this beginning version throughout the software process development. And document may need any correction after reviewed in IS502 course time. The configuration management of this document will be handled by using version name update. Revision number information for updates will be in "Change History" part of the documents as below:

CHANGE HISTORY

Date Document	Version Name	Format	Status
26.02.2002	Initial Plan v1.0	MS Word 2000 Document	Created
01.03.2002	Initial Plan v1.1	MS Word 2000 Document	Revised

2. REFERENCES

- [1] Borland JBuilder Online Installation Guide, Borland.
- [2] IEEE Std 1058-1998, IEEE Standard for Software Project Management Plans
- [3] Oracle 9i Database Online Documentation, Oracle.
- [4] Oracle 9i JDeveloper Online Installation Guide, Oracle.
- [5] POKEMON Team Problem Statement v1.0
- [6] IS 507 Fall 2001-2002 Course Notes, Assoc. Prof. Dr. Onur DEMİRÖRS
- [7] http://pages.cpsc.ucalgary.ca/~hongd/SENG/621/report2.html, Software Cost Estimation, Danfeng Hong

3. DEFINITIONS

3.1 Definitions

Authorized Person: A user who can access the OBRS portal to update routing information about his/her bus firm.

Bus Firms: Firms, that member of OBRS portal.

Database: Database, which has taken from the customer.

Firm Database: OBRS database, where route information such as date, time, city, price are stored.

Travelers: Users, who will login OBRS to make reservation.

3.2 Abbreviations

ADJ	Adjustment Factor
CBT	Computer Based Training
COCOMO	Constructive Cost Model
FP	Function Point
HW	Hardware
IDE	Integrated Development Environment
IEEE	Institute of Electrical and Electronics Engineers
KDSI	1000 Delivered Source Instructions
KLOC	1000 Lines of Code
LOC	Lines of Code
OBRS	Online Bus Reservation System
OO	Object Oriented
RDBMS	Relational Database Management System
SDD	Software Design Description
SPMP	Software Project Management Plan
SRS	Software Requirements Specification
SW	Software
TDI	Total Degree of Influence
VAF	Value Adjustment Factor

4. PROJECT ORGANIZATION

This section identifies the interfaces to organizational entities external to the project, describes the project's internal organizational structure and defines roles and responsibilities for the project.

4.1 External Interface

This subsection of the plan shall describe the organizational boundaries between the project and external entities.

4.1.1 Acquirer

The research assistants Çiğdem GENCEL and Murat YAKICI are the project's acquirer. Their responsibilities are mentioned in Section 4.3.2. as customer. Meeting will be held in IS502 course time with acquirers to inform them about the recent status of the project and get feedbacks. Communication Manager of the OBRS project stated in Section 4.3.1 can arrange extra meetings to confirmation about requirements.

4.1.2 Quality Group

Quality Group is the party responsible for reviewing the documents after the preparation of each project deliverable. For this reason the meeting will be guided by the instructor. In this meeting, all members of both Quality Group and OBRS project members are going to share their ideas about the lacking and unclear parts of the delivered documents.

Table 2 - Quality Group

Member Name	e-mail address
Ahmet KARA	ahmetkara@gmail.com
Seda BARIŞ	sedabaris@gmail.com
Erkin BAYKAL	erkinbaykal@gmail.com

4.2 Internal Structure

Weekly meetings between the project members are scheduled on Wednesday evenings and Sunday mornings. Wednesday evening meetings are used as overall evaluation of project flow and pre-evaluation of the recent due deliverable. Since it is required to hand in a deliverable almost every week, group members are expected to accomplish the decided responsibilities until Sunday mornings and Sunday meetings are going to be used for merging pieces proposed by group members to form the deliverables. Communication between group members shall be maintained employing e-mail as the major communication channel.

4.3 Roles and Responsibilities

Defined "Online Bus Reservation" project roles and assigned group members are stated and the degree of members work schedule is determined in this section.

4.3.1 Internal Roles:

- *Communication Manager:* Responsible from on-time delivery of the project milestones and the communication with the customer and the course instructor to identify requirements.

- *Configuration Manager:* Responsible for applying changes, maintaining the modifications of requirements. And put in to form of documents such as Initial Plan, SRS, SPMP, SDD and User Manual.

- *Designer:* Responsible from design of proposed requirements specification and the implementation of proposed design.

- *Project Manager:* Responsible from the overall project management and meeting facilitation.

- *Programmer:* Responsible from the coding the system and coordinating designs and integration of code.

- *Quality Assurance Manager:* Check the review group's documents according to the IEEE standards and determine the misunderstanding subjects briefly till the review meeting time of each document, which declared as a deliverable in course milestones.

- *Risk Manager:* Responsible from identifying the risks like compromise the system success and prioritizing the risks as they are identified and bring them to the attention of the group members.

According to this definition, group member's roles and responsibilities are shown in Table3 as a checklist.

Table 3 - Internal Roles and Responsibilities

	Bilgehan	Candaş	Güven	Meltem
Communication Manager	√			
Configuration Manager		√		
Designer	√	√	√	√
Project Manager				√
Programmer		√	√	
Quality Assurance Manager	√	√	√	√
Risk Manager			√	

4.3.2 External Roles:

- *Customer:* Responsible for defining and approving all requirements, and all modification to requirements; will receive the final product. Attending all agreed and arranged meetings with group members. Providing feedback to the group members on the conduct of the project and performance of the system delivered.

- *Quality Group:* Responsible for reviewing the deliverables and also in requesting corrections. Providing advice on conduct of the project and on requirements for project documentation. Monitoring consistency in assessment practices through regular group meetings. Completing all final assessments in a timely manner.

  According to this definition, external people roles and responsibilities are shown in Table4 as a checklist.

Table 4 - External Roles and Responsibilities

	Customer	Quality Group
Murat YAKICI	√	
Çiğdem GENCEL	√	
Ahmet KARA		√
Seda BARIŞ		√
Erkin BAYKAL		√

5. MANAGERIAL PROCESS PLAN

5.1 Project Start-Up Plan

5.1.1 Staffing Plan

Throughout the project, group members shall be responsible for the requirements and deliverables. Detailed roles and responsibilities of the group members are defined in section 4.3.1.There will be no internal transfer among responsibilities, any hire staff or conducted personnel during the project evolution process.

5.1.2 Resource Acquisition Plan

For acquiring resources of Online Bus Reservation System, all the project members will be responsible for identifying the needs, investigating the feasible and alternate solutions, and choosing the most appropriate one(s). At this stage, following resources (shown in Table 12 and 13) are identified and the project team members will supply these resources for developing process.

Table 5 - Software Resources

SOFTWARE	NAME	VERSION	SOURCE	DATE[4]
Operating System	Microsoft Windows	NT 4.0[1], Windows 2000[2]	Microsoft	2/18/2002
Service Pack	NT 4.0 Service Pack	6a or later	Microsoft	2/18/2002
	Windows 2000 Service Pack	1 or later	Microsoft	2/18/2002
RDBMS	Oracle 9i Enterprise	9.0.1	Oracle	4/9/2002
Web Server	Apache	1.3.1 or later	Apache	4/9/2002
Development Tool[3]	Oracle 9i JDeveloper	9.0.695	Oracle	4/9/2002
	Borland JBuilder	6.0.438	Borland	4/9/2002
Word Processor	Microsoft Word	2000	Microsoft	2/18/2002
Drawing Tool	Microsoft Visio	2000	Microsoft	3/6/2002
Web Design Tool	Microsoft FrontPage	2000	Microsoft	3/6/2002
Web Browser	Internet Explorer	5.0	Microsoft	3/6/2002
Project Management Tool	Microsoft Project	2000	Microsoft	2/18/2002

With the system requirements of the Oracle 9i RDBMS [3] and the IDEs (Oracle 9i JDeveloper [4] and/or Borland JBuilder 6 [1]), the following hardware configuration fits into development process needs.

Table 6 - Hardware Resources

Hardware	Requirements	Date[4]
Processor	Min. Pentium III 550, recommended Pentium III 1 GHz.	4/9/2002
Hard Disk	Minimum 6.4 GB.	4/9/2002
Physical Memory	Minimum 128 MB RAM; recommended 256 MB RAM.	4/9/2002
Network Adapter	10/100 PCI Adapters.	4/9/2002
Display	True Color (32 bit) with 1024x768 display resolution.	4/9/2002
CD-ROM	A CD-ROM drive is required to install the software.	4/9/2002

And while developing Online Bus Reservation System, the self-training materials for project members, such as CBTs, tutorials, books, and online documentations will be supplied by the project members.

5.1.3 Project Staff Training Plan

This project is aimed to realize for IS502 course. Group members may be lack of knowledge, to develop required software system. But one semester is not enough time to educate people while constructing an adequate system. Therefore, each member of the group will work alone to train her/himself. The self-training materials for project members would be CBTs, tutorials, books, and online documentations supplied by the group member Güven Fidan. He will supply these self-training materials until the start date of SDD preparation (See Appendix) that is 4/10/2002. Also, the documents' preparation training is made based on the given assignments about the IEEE standards.

[1] Windows NT includes: Windows NT Workstation 4.0, Windows NT Server 4.0, Windows NT Server Enterprise Edition 4.0, and Windows NT 4.0 Server, Terminal Server Edition.

[2] Windows 2000 includes: Windows 2000 Professional, Windows 2000 Server, Windows 2000 Advanced Server, and Windows 2000 Datacenter.

[3] The development tool will be chosen from one of Oracle 9i JDeveloper or Borland JBuilder IDEs, after a detailed study of these environments.

[4] These dates are the last date to acquire the resources and are related with the start date of the phases in the project schedule (See Appendix).

Appendix: Project Schedule Summary Gantt Chart

	Task Name	Duration	Start	Finish
1	**Documentation**	**85 days?**	**Wed 2/13/02**	**Sun 6/9/02**
2	Problem analysis	3 days	Wed 2/13/02	Sun 2/17/02
3	Problem statement submission	1 day	Mon 2/18/02	Mon 2/18/02
4	initial plan	5 days	Tue 2/19/02	Mon 2/25/02
5	finalize initial plan and submission	1 day	Tue 2/26/02	Tue 2/26/02
6	initial plan review report and submis	1 day	Wed 2/27/02	Wed 2/27/02
7	update initial plan	1 day	Thu 2/28/02	Thu 2/28/02
8	finalizing updated initial plan and sul	1 day	Fri 3/1/02	Fri 3/1/02
9	reviwing IEEE std 1233 standard	2 days	Fri 3/1/02	Mon 3/4/02
10	submit assignment on IEEE 1233	1 day	Tue 3/5/02	Tue 3/5/02
11	SRS preperation	8 days	Thu 3/7/02	Sat 3/16/02
12	finilize SRS and submit	1 day	Mon 3/18/02	Mon 3/18/02
13	SRS review report and submission	1 day	Wed 3/20/02	Wed 3/20/02
14	update SRS	1 day	Fri 3/22/02	Fri 3/22/02
15	reviwing IEEE SPMP standart	2 days	Mon 3/25/02	Tue 3/26/02
16	submit assignment	1 day	Tue 3/26/02	Tue 3/26/02
17	SPMP preparation	3 days	Wed 3/27/02	Fri 3/29/02
18	submit SPMP	1 day	Mon 4/1/02	Mon 4/1/02
19	SPMP review report and submissior	1 day	Wed 4/3/02	Wed 4/3/02
20	update SPMP	1 day	Thu 4/4/02	Thu 4/4/02
21	submit SPMP	1 day	Fri 4/5/02	Fri 4/5/02
22	review IEEE Std 1016	2 days	Sat 4/6/02	Mon 4/8/02
23	submit assignment on IEEE std 1016	1 day	Tue 4/9/02	Tue 4/9/02
24	SDD preperation	13 days	Wed 4/10/02	Sat 4/27/02
25	submit SDD	0 days	Sat 4/27/02	Sat 4/27/02
26	SDD review report and submission	1 day	Wed 5/1/02	Wed 5/1/02
27	update SDD	1 day	Thu 5/2/02	Thu 5/2/02
28	submit updated SDD	1 day	Fri 5/3/02	Fri 5/3/02
29	finalizing product	9 days	Mon 5/6/02	Thu 5/16/02
30	deliver product	1 day	Mon 5/20/02	Mon 5/20/02
31	review IEEE std 1063	1 day	Tue 5/21/02	Tue 5/21/02
32	submit assignment on IEEE std 1063	1 day	Wed 5/22/02	Wed 5/22/02
33	user manual preparation	13 days?	Wed 5/22/02	Fri 6/7/02
34	user manual submission	0 days	Sun 6/9/02	Sun 6/9/02
35	Product demonstration	0 days	Sun 6/9/02	Sun 6/9/02
36	delivery of final product	0 days	Sun 6/9/02	Sun 6/9/02
37	CODING	27 days?	Thu 4/11/02	Fri 5/17/02
38	**Preparing development environme**	**10 days**	**Fri 3/1/02**	**Thu 3/14/02**
39	providing installation media	6 days	Fri 3/1/02	Fri 3/8/02
40	set up dev. Env.	4 days	Mon 3/11/02	Thu 3/14/02
41	**Configuration management**	**85 days?**	**Wed 2/13/02**	**Fri 6/7/02**
42	prepare the documents	85 days?	Wed 2/13/02	Fri 6/7/02
43	revise the documents	75 days?	Wed 2/27/02	Fri 6/7/02