Lunar Lander Project Report

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List of Figures

(The title above is formatted as Heading 3, so that it appears in the table of contents, but was then modified to be centered and include a page break before the paragraph. Likewise for the List of Tables heading on the next page..) ***Note: Remove this instructional paragraph.***

If a document contains a large number of figures, then it is appropriate to include a list of figures at the beginning of the document, following the table of contents. Each figure should include a title, and be numbered in a consistent logical fashion. The following list of figures was automatically generated from figure captions (see ***Error! Reference source not found.*** *on page* ***Error! Bookmark not defined.*** *), and can be automatically updated by right-clicking on the table below and selecting "Update Field". This feature is located in the "Captions" section of the "References" tab in MS Word.* ***Note: Remove this instructional paragraph.***

On a related note, the references in the paragraph above, "(see ***Error! Reference source not found.*** *on page* ***Error! Bookmark not defined.*** *)" include cross-references to the Figure and page number that will adjust automatically when other Figures or pages are added or removed. This is done with the "cross-reference" button in the "Captions" section of the "References" tab in MS Word.* ***Note: Remove this instructional paragrap***

List of Tables

If a document contains a large number of tables, then it is appropriate to include a list of tables at the beginning of the document, following the table of contents. Each table should include a title, and be numbered in a consistent logical fashion. The following list of tables was automatically generated from table captions (see below), and can be automatically updated by right-clicking on the table below and selecting "Update Field". This feature is located in the "Captions" section of the "References" tab in MS Word. ***Note: Remove this instructional paragraph.***

I Project Description

Short Version (SV): Section I of the document provides a clear detailed picture of the product to be produced, why it needs to be produced, who would use it, what they would do with it, and provides other important background information prior to developing detailed requirements or designs.

1 Project Overview

SV: Provide a brief quick description of the project, generally no more than a paragraph or two. The reader should get a good idea of what the project is all about from this opening section.

Your text goes here . . .

2 The Purpose of the Project

SV: Describe WHY this project is being done, and what one hopes to achieve from it.

2a The User Business or Background of the Project Effort

SV: Describe the client's business, e.g. the newspaper publishing business or the firefighting business, to the extent that it is relevant for this project. Note the distinction between "business" and "work" as described below in section I.3 below.

Content

content, motivation, examples and Considerations

A short description of the business being done, its context, and the situation that triggered the development effort. It should also describe the work that the user intends to do with the delivered product.

Motivation

Without this statement, the project lacks justification and direction.

Considerations

You should consider whether the user problem is serious, and whether and why it needs to be solved.

Your text goes here . . .

2b Goals of the Project

*SV: Describe **WHY** this project is being carried out, from the point of view of the client. Note that the goal should be to improve the life of the client in some way, not just the development of software. (The SW is a means to an end, not the goal.)*

(Note: This item and the following one together cover the " Objectives and success criteria of the project" item specified by Bruegge & DuToit.)

Content

This boils down to one sentence, or at most a few sentences, that say why we want this product. Here is where you state the real reason the product is being developed.

Motivation

There is a danger that this purpose may get lost along the way. As the development effort heats up, and as the customer and developers discover more about what is possible, the system could potentially wander away from the original goals as it undergoes construction. This is a bad thing unless there is some deliberate act by the client to change the goals. It may be necessary to appoint a person to be custodian of the goals, but it is probably sufficient to make the goals public and periodically remind the developers of them. It should be mandatory to acknowledge the goals at every review session.

Examples

We want to give immediate and complete response to customers who order our goods over the telephone.

We want to be able to forecast the weather.

Your text goes here . . .

2c Measurement

SV: How will one know when the goals stated in I.2.2b have been met? What measurable result can we point to and say that the goal has been met?

Any reasonable goal must be measurable. This is necessary if you are ever to test whether you have succeeded with the project. The measurement must quantify the advantage gained by the business through doing the project. If the project is worthwhile, there must be some solid business reason for doing it. For example, if the goal of the project is

We want to give immediate and complete response to customers who order our goods over the telephone.

you have to ask what advantage that goal brings to the organization. If immediate response will result in more satisfied customers, then the measurement must quantify that satisfaction. For example, you could measure the increase in repeat business (on the basis that a happy customer comes back for more), the increase in customer

approval ratings from surveys, the increase in revenue from returning customers, and so on.

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It is crucial to the rest of the development effort that the goal is firmly established, is reasonable, and is measured. It is usually the latter that makes the former possible.

Your text goes here . . .

3 The Scope of the Work

SV: The "work" is a subset of the "business", and describes the set of activities that will be addressed by the proposed product. For example, if the business is "university level education", then the work addressed by this project might be "the production and delivery of classroom lectures". Obviously the business of running a university encompasses a lot more than just classroom lectures, but this particular project will only concern itself with that particular aspect of the overall business.

This section describes the (business) environment in which the product will be

used. A sentence or two here can briefly state what the "work" is.

Your text goes here . . .

3a The Current Situation

SV: Describe how the client is conducting the work now, without the proposed product. Note that the current situation may or may not involve computers.

Content

This is an analysis of the existing business processes, including the manual and automated processes that might be replaced or changed by the new product. Business analysts might already have done this investigation as part of the business case analysis for the project.

Motivation

If your project intends to make changes to an existing manual or automated system, you need to understand the effect of proposed changes. The study of the current situation provides the basis for understanding the effects of proposed changes and choosing the best alternatives. Knowing what users are doing now can give insight into their views of a proposed new system.

Your text goes here . . .

3b The Context of the Work

SV: Define the boundary between what is included in "the work" and what is not. It also defines what external entities "the work" must interact with and what those interactions entail. ***The following example diagram should be replaced with one appropriate to this project.***

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Content

The work context diagram identifies the work that you need to investigate to be able to build the product. Note that it includes more than the intended product. Unless we understand the work that the product will support, we have little chance of building a product that will fit cleanly into its environment.

The adjacent systems on the context diagram (e.g., Weather Forecasting Service) indicate other subject matter domains (systems, people, and organizations) that need to be understood. The interfaces between the adjacent systems and the work context indicate why we are interested in the adjacent system. In the case of Weather Forecasting Service, we can say that we are interested in the details of when, how, where, who, what, and why it produces the District Weather Forecasts information.

Motivation

To clearly define the boundaries for the study of the work and requirements effort. Without this definition, we have little chance of building a product that will fit seamlessly into its environment.

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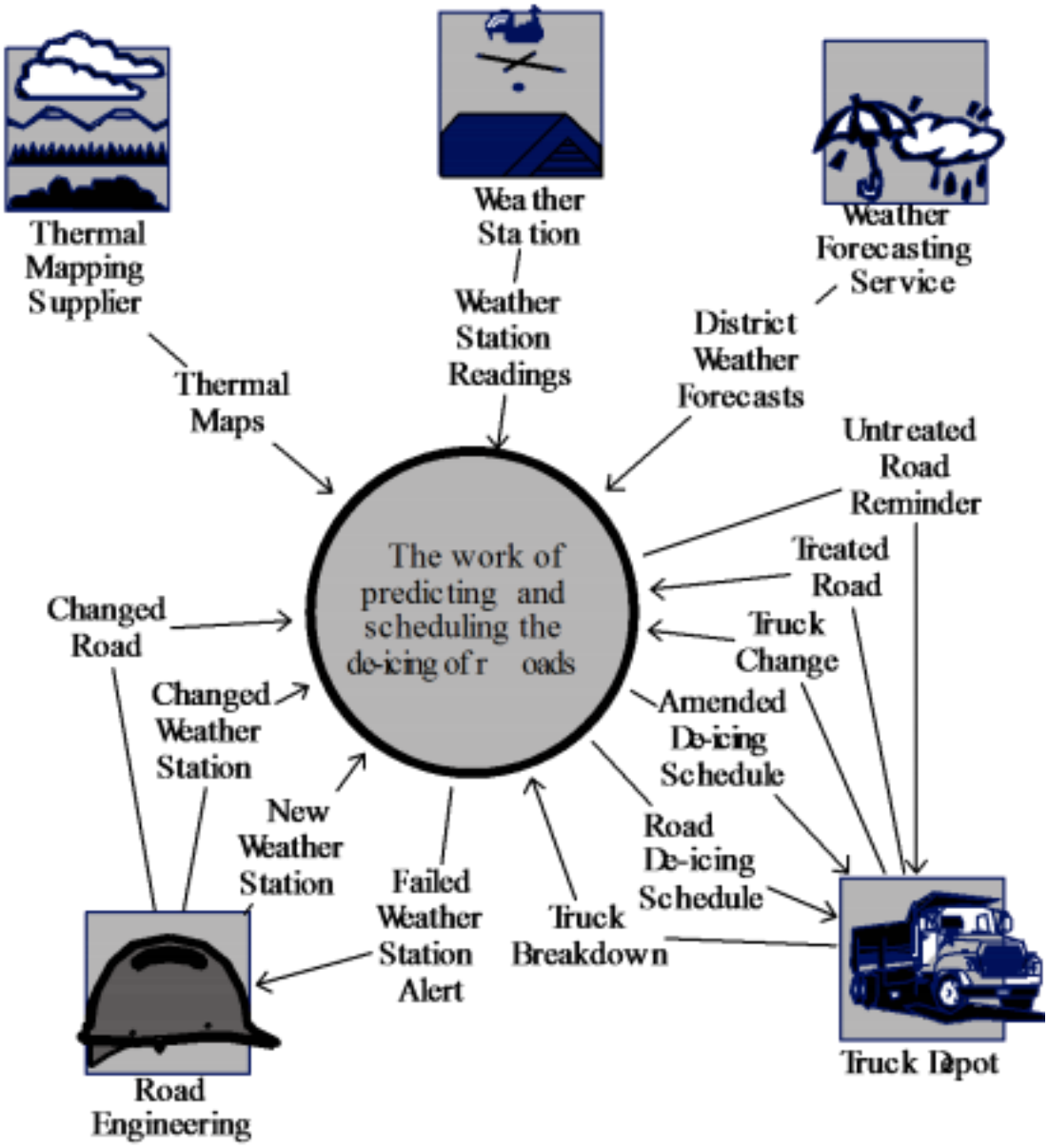
Examples



Considerations

The names used on the context diagram should be consistent with the naming conventions and data dictionary definitions presented in section 5. Without these definitions, the context model lacks the required rigor, and it may be misunderstood. Relevant stakeholders must agree to the definitions of the interfaces shown on the context model.

Your diagram and text goes here . . .

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3c Work Partitioning

SV: "The work" is often large and complex, with many different activities and

concerns. One good way to break this down and organize it for analysis is to identify the different events to which the business must respond. A "business event" is an external stimulus which causes the business to take a series of actions in response.

Content

A list showing all business events to which the work responds. Business events are happenings in the real world that affect the work. They also happen because it is time for the work to do something—for example, produce weekly reports, remind nonpaying customers, check the status of a device, and so on. The response to each event is called a business use case; it represents a discrete partition of work that contributes to the total functionality of the work.

The event list includes the following elements:

- *Event name*
- *Input from adjacent systems (identical with name on context diagram)*
- *Output to adjacent systems (identical with name on context diagram)*
- *Brief summary of the business use case (This is optional, but we have found it is a very useful first step in defining the requirements for the business use case—you can think of it as a mini-scenario.)*

Motivation

To identify logical chunks of the system that can be used as the basis for discovering detailed requirements. These business events also provide the subsystems that can be used as the basis for managing detailed analysis and design.

Example

Business Event List

Event Name Input and Output Summary

1. Weather Station transmits reading	Weather Station Readings (in)	Record the readings as belonging to the weather station.
2. Weather Service forecasts weather	District Weather Forecast (in)	Record the forecast.
3. Road engineers advise changed roads	Changed Road (in)	Record the new or changed road. Check that all appropriate weather stations are attached.
4. Road Engineering installs new Weather Station	Failed Weather Station Alert (out)	Determine if any weather stations have not transmitted for two hours, and inform Road Engineering of any failures.
5. Road Engineering changes Weather Station	Record the weather station and attach it to the appropriate roads.	
6. Time to test Weather Stations	New Weather Station (in)	
7. Truck Depot changes a truck	Changed Weather Station Truck Change (in)	Record the changes to the truck.
8. Time to detect icy roads	Record the changes (out)	
	Predict the ice situation for the next two hours. Assign Road De-icing Schedule	a truck to any roads that will freeze. Issue the schedule.
9. Truck treats a road	Treated Road (in)	Record the road as being in a safe condition for the next three hours.
10 Truck Depot reports problem with truck		Reminder (out) Reassign available trucks to the previously assigned roads.
11. Time to monitor road treatment	Considerations Truck Breakdown (in) Amended Gritting Schedule (out) Untreated Road	Check that all scheduled roads have been treated in the assigned time, and issue reminders for any untreated roads.

Attempting to list the business events is a way of testing the work context. This activity

uncovers uncertainties and misunderstandings about the project and facilitates precise

communications. When you do an event analysis, it will usually prompt you to make some changes to your work context diagram.

We suggest you gather requirements for discrete sections of the work. This requires you to partition the work, and we have found business events to be the most convenient, consistent, and natural way to break the work into manageable units.

Your text goes here. *A table is recommended . . .*

3d Competing Products

*SV: **IF** there are other existing products that the client could use instead of the proposed product, then they should be discussed here, along with the reasons why the proposed product is still needed / beneficial.*

Content

Other alternatives that already exist can be described here. Why should we go to all the trouble of creating a new product? What flaws or deficiencies do the existing products have that justify the creation of something new?

Motivation

Knowing what other choices the customer has to choose from can help us judge whether or not our project is even worth doing, and if so, what we need to do different to be better than the available alternatives.

Considerations

Note the subtle difference between this item and the "Off the Shelf" solutions documented in sections 0 or 29 below. The latter refers to software that we can buy and incorporate into our solution.

Your text goes here . . .

4 The Scope of the Product

The work handled by the product would be to create an environment where players can pick up and play the game. As a result, the product would need to have a strong server established to allow client connections and create matches for players to play. Allowing for an entertaining yet simple UI to allow for players to appreciate the game and its simplicity.

4a Scenario Diagram(s)

4b Product Scenario List

1. People that want a casual game to play for highscores.
2. People that want to play a casual but competitive game to play with friends.
3. People that want to play for some fun.
4. People that played Lunar Lander arcade, but want to play a multiplayer version of the game.
5. People who are experienced with the game and want to show that they are the best of the best.

4c Individual Product Scenarios

People playing for fun: Most players will be attracted to the game for its easy controls and will be playing the game for fun and to relax.

People playing competitively: More experienced players will want to compete with other experienced players to be the best.

People playing alone: Some people will not want to play with others, and can play the game alone and give more of an arcade game feel.

5 Stakeholders

SV: Stakeholders include all persons or entities that have an interest in the proposed product or its development, either directly or indirectly.

5a The Client

SV: The client pays up front for the product to be developed, and provides guidance or other input for its development. Some projects do not have an external client, in which case the developing organization acts as the client.

Content

This item gives the name of the client. It is permissible to have several names, but having more than three negates the point.

Motivation

The client has the final say on acceptance of the product, and thus must be satisfied with the product as delivered. You can think of the client as the person who makes the investment in the product. Where the product is being developed for in-house consumption, the roles of the client and the customer are often filled by the same person. If you cannot find a name for your client, then perhaps you should not be building the product.

Considerations

Sometimes, when building a package or a product for external users, the client is the marketing department. In this case, a person from the marketing department must be named as the client.

Your text goes here . . .

5b The Customer

SV: The customer is the person or entity who will buy the product after it has been completed. Some projects do not have an external customer, if they are to be used in

house or for the client's use only.

Content

The person intended to buy the product. In the case of in-house development, the client and the customer are often the same person. In the case of development of a mass-

market product, this section contains a description of the kind of person who is likely to buy the product.

Motivation

The customer is ultimately responsible for deciding whether to buy the product from the client. The correct requirements can be gathered only if you understand the customer and his aspirations when it comes to using your product.

Your text goes here . . .

5c Hands-On Users of the Product

SV: These are the people who will actually use the product in practice, and who may be separate from the customer or client. For example, educational software may be purchased by the school system (customer) and used by students (hands-on users.)

Content

A list of a special type of stakeholder—the potential users of the product. For each category of user, provide the following information:

- *User name/category: Most likely the name of a user group, such as schoolchildren, road engineers, or project managers.*
- *User role: Summarizes the users' responsibilities.*
- *Subject matter experience: Summarizes the users' knowledge of the business. Rate as novice, journeyman, or master.*
- *Technological experience: Describes the users' experience with relevant technology. Rate as novice, journeyman, or master.*
- *Other user characteristics: Describe any characteristics of the users that have an effect on the requirements and eventual design of the product. For example:*

Physical abilities/disabilities

Intellectual abilities/disabilities

Attitude toward job

Attitude toward technology

Education

Linguistic skills

Age group

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Gender

Motivation

Users are human beings who interface with the product in some way. Use the characteristics of the users to define the usability requirements for the product. Users are also known as actors.

Examples

Users can come from wide variety of (sometimes unexpected) sources. Consider the possibility of your users being clerical staff, shop workers, managers, highly trained operators, the general public, casual users, passers-by, illiterate people, tradesmen, students, test engineers, foreigners, children, lawyers, remote users, people using the system over the telephone or an Internet connection, emergency workers, and so on.

Your text goes here . . .

5d Maintenance Users and Service Technicians

SV: Describe users that will install, maintain, update, and otherwise service the product as needed. May not apply to all projects.

Content

Maintenance users are a special type of hands-on users who have requirements that are specific to maintaining and changing the product.

Motivation

Many of these requirements will be discovered by considering the various types of maintenance requirements detailed in section 14. However, if we define the characteristics of the people who maintain the product, it will help to trigger requirements that might otherwise be missed.

Your text goes here . . .

5e Other Stakeholders

SV: This section is a catch-all for all other stakeholders not previously mentioned. Note that some stakeholders may be negatively impacted by the proposed project, for example if their work duties change or are eliminated.

Content

The roles and (if possible) names of other people and organizations who are affected by the product, or whose input is needed to build the product.

Examples of stakeholders:

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- *Sponsor*
- *Testers*
- *Business analysts*
- *Technology experts*
- *System designers*
- *Marketing experts*
- *Legal experts*
- *Domain experts*
- *Usability experts*
- *Representatives of external associations*

For a complete checklist, download the stakeholder analysis template at www.volere.co.uk.

For each type of stakeholder, provide the following information:

- *Stakeholder identification (some combination of role/job title, person name, and organization name)*
- *Knowledge needed by the project*
- *The degree of involvement necessary for that stakeholder/knowledge combination*
- *The degree of influence for that stakeholder/knowledge combination*

- *Agreement on how to address conflicts between stakeholders who have an interest in the same knowledge*

Motivation

Failure to recognize stakeholders results in missing requirements.

Your text goes here . . .

5f User Participation

SV: To what extent can we expect users to participate during the development of the product?

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Content

Where appropriate, attach to the category of user a statement of the participation that you think will be necessary for those users to provide the requirements. Describe the contribution that you expect these users to provide—for example, business knowledge, interface prototyping, or usability requirements. If possible, assess the minimum amount of time that these users must spend for you to be able to determine the complete requirements.

Motivation

Many projects fail through lack of user participation, sometimes because the required degree of participation was not made clear. When people have to make a choice between getting their everyday work done and working on a new project, the everyday work usually takes priority. This requirement makes it clear, from the outset, that specified user resources must be allocated to the project.

Your text goes here . . .

5g Priorities Assigned to Users

SV: To the extent that some users are more important to the project than others, the relative priorities should be identified here.

Content

Attach a priority to each category of user. This gives the importance and precedence of the user. Prioritize the users as follows:

- *Key users: They are critical to the continued success of the product. Give greater importance to requirements generated by this category of user.*

● Secondary users: They will use the product, but their opinion of it has no effect on its long-term success. Where there is a conflict between secondary users' requirements and those of key users, the key users take precedence.

● Unimportant users: This category of user is given the lowest priority. It includes infrequent, unauthorized, and unskilled users, as well as people who misuse the product.

The percentage of the type of user is intended to assess the amount of consideration given to each category of user.

Motivation

If some users are considered to be more important to the product or to the organization, then this preference should be stated because it should affect the way that you design the product. For instance, you need to know if there is a large customer group who has

specifically asked for the product, and for which, if they do not get what they want, the results could be a significant loss of business.

Some users may be listed as having no impact on the product. These users will make use of the product, but have no vested interest in it. In other words, these users will not complain, nor will they contribute. Any special requirements from these users will have a lower design priority.

Your text goes here . . .

6 Mandated Constraints

SV: Mandated constraints are requirements that are set in stone by the client before the project is really even started, and before the full set of requirements are determined. Note that not all of these sections will apply to every project, and that some constraints could be placed equally well in more than one section (but should not be duplicated.).

This section describes constraints on the eventual design of the product. They are the same as other requirements except that constraints are mandated, usually at the beginning of the project. Constraints have a description, rationale, and fit criterion, and generally are written in the same format as functional and nonfunctional requirements.

6a Solution Constraints

SV: These are general constraints on the product to be developed or the manner in which it is to be developed that are not covered elsewhere.

Content

This specifies constraints on the way that the problem must be solved. Describe the mandated technology or solution. Include any appropriate version numbers. You should also explain the reason for using the technology.

Motivation

To identify constraints that guide the final product. Your client, customer, or user may have design preferences, or only certain solutions may be acceptable. If these constraints are not met, your solution is not acceptable.

Examples

Constraints are written using the same form as other atomic requirements (refer to the requirements shell for the attributes). It is important for each constraint to have a rationale and a fit criterion, as they help to expose false constraints (solutions masquerading as constraints). Also, you will usually find that a constraint affects the entire product rather than one or more product use cases.

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Description: The product shall use the current two-way radio system to communicate with the drivers in their trucks.

Rationale: The client will not pay for a new radio system, nor are any other means of communication available to the drivers.

Fit criterion: All signals generated by the product shall be audible and understandable by all drivers via their two-way radio system.

Description: The product shall operate using Windows XP.

Rationale: The client uses XP and does not wish to change.

Fit criterion: The product shall be approved as XP compliant by the MS testing group.

Description: The product shall be a hand-held device.

Rationale: The product is to be marketed to hikers and mountain climbers.

Fit criterion: The product shall weigh no more than 300 grams, no dimension shall be more than 15 centimeters, and there shall be no external power source.

Considerations

We want to define the boundaries within which we can solve the problem. Be careful, because anyone who has experience with or exposure to a piece of technology tends to see requirements in terms of that technology. This tendency leads people to impose solution constraints for the wrong reason, making it very easy for false constraints to creep into a specification. The solution constraints should only be those that are absolutely non-negotiable. In other words, however you solve this problem, you must use this particular technology. Any other solution would be unacceptable.

Your text goes here . . .

6b Implementation Environment of the Current System

SV: This section deals with the physical and technical environment in which the proposed product will operate, such as hardware, operating system, and communications issues.

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Content

This describes the technological and physical environment in which the product is to be installed. It includes automated, mechanical, organizational, and other devices, along with the nonhuman adjacent systems.

Motivation

To describe the technological environment into which the product must fit. The environment places design constraints on the product. This part of the specification provides enough information about the environment for the designers to make the product successfully interact with its surrounding technology.

The operational requirements are derived from this description.

Examples

Examples can be shown as a diagram, with some kind of icon to represent each separate device or person (processor). Draw arrows to identify the interfaces between the processors, and annotate them with their form and content.

Considerations

All component parts of the current system, regardless of their type, should be included

in the description of the implementation environment.

If the product is to affect, or be important to, the current organization, then include an organization chart.

Your text goes here . . .

6c Partner or Collaborative Applications

SV: This section documents external applications with which this product must be compatible, such as the ability to read and write Microsoft Excel format data files.

Content

This describes applications that are not part of the product but with which the product will collaborate. They can be external applications, commercial packages, or preexisting in-house applications.

Motivation

To provide information about design constraints caused by using partner applications. By describing or modeling these partner applications, you discover and highlight potential problems of integration.

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Examples

This section can be completed by including written descriptions, models, or references to other specifications. The descriptions must include a full specification of all interfaces that have an effect on the product.

Considerations

Examine the work context model to determine whether any of the adjacent systems should be treated as partner applications. It might also be necessary to examine some of the details of the work to discover relevant partner applications.

Your text goes here . . .

6d Off-the-Shelf Software

*SV: This section describes commercial off-the-shelf (COTS) software that **MUST** be included in the final product.*

Content

This describes commercial, open source, or any other off-the-shelf software (OTS)

that must be used to implement some of the requirements for the product. It could also apply to nonsoftware OTS components such as hardware or any other commercial product that is intended as part of the solution.

Motivation

To identify and describe existing commercial, free, open source, or other products to be incorporated into the eventual product. The characteristics, behavior, and interfaces of the package are design constraints.

Examples

This section can be completed by including written descriptions, models, or references to supplier's specifications.

Considerations

When gathering requirements, you may discover requirements that conflict with the behavior and characteristics of the OTS software. Keep in mind that the use of OTS software was mandated before the full extent of the requirements became known. In light of your discoveries, you must consider whether the OTS product is a viable choice. If the use of the OTS software is not negotiable, then the conflicting requirements must be discarded.

Note that your strategy for discovering requirements is affected by the decision to use OTS software. In this situation you investigate the work context in parallel with making comparisons with the capabilities of the OTS product. Depending on the

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comprehensibility of the OTS software, you might be able to discover the matches or mismatches without having to write each of the business requirements in atomic detail. The mismatches are the requirements that you will need to specify so that you can decide whether to satisfy them by either modifying the OTS software or modifying the business requirements.

Given the spate of lawsuits in the software arena, you should consider whether any legal implications might arise from your use of OTS. You can cover this in the section on Legal Requirements.

*Note the subtle difference between this section and section 29 below. This section documents OTS solutions that **must be** included in the final solution, and the latter offers suggestions for OTS that could be included.*

Your text goes here . . .

6e Anticipated Workplace Environment

SV: This section deals with human factors regarding the environment in which the

product will be used, such as noisy environments or mobile applications.

Content

This describes the workplace in which the users are to work and use the product. It should describe any features of the workplace that could have an effect on the design of the product, and the social and culture of the workplace.

Motivation

To identify characteristics of the workplace so that the product is designed to compensate for any difficulties.

Examples

The printer is a considerable distance from the user's desk. This constraint suggests that printed output should be deemphasized.

The workplace is noisy, so audible signals might not work.

The workplace is outside, so the product must be weather resistant, have displays that are visible in sunlight, and allow for the effect of wind on any paper output.

The product is to be used in a library; it must be extra quiet.

The product is a photocopier to be used by an environmentally conscious organization; it must work with recycled paper.

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The user will be standing up or working in positions where he must hold the product. This suggests a hand-held product, but only a careful study of the users' work and workplace will provide the necessary input to identifying the operational requirements.

Considerations

The physical work environment constrains the way that work is done. The product should overcome whatever difficulties exist; however, you might consider a redesign of the workplace as an alternative to having the product compensate for it.

Your text goes here . . .

6f Schedule Constraints

*SV: **When** things must be done, or when they may be most/least beneficial.*

Content

Any known deadlines, or windows of opportunity, should be stated here.

Motivation

To identify critical times and dates that have an effect on product requirements. If the deadline is short, then the requirements must be kept to whatever can be built within the time allowed.

Examples

To meet scheduled software releases.

There may be other parts of the business or other software products that are dependent on this product.

Windows of marketing opportunity.

Scheduled changes to the business that will use your product. For example, the organization may be starting up a new factory and your product is needed before production can commence.

Considerations

State deadline limitations by giving the date and describing why it is critical. Also, identify prior dates where parts of your product need to be available for testing.

You should also ask questions about the impact of not meeting the deadline: ●

What happens if we don't build the product by the end of the calendar year?

● What is the financial impact of not having the product by the beginning of the Christmas buying season?

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Your text goes here . . .

6g Budget Constraints

SV: Limitations on the funds and other resources available for this project.

Content

The budget for the project, expressed in money or available resources.

Motivation

The requirements must not exceed the budget. This limitation may constrain the number of requirements that can be included in the product.

The intention of this question is to determine whether the product is really

wanted. Considerations

Is it realistic to build a product within this budget? If the answer to this question is no, then either the client is not really committed to building the product or the client does not place enough value on the product. In either case you should consider whether it is worthwhile continuing.

Your text goes here . . .

7 Naming Conventions and Definitions

SV: Define terminology to avoid miscommunications or

misunderstandings. **7a Definitions of Key Terms**

*SV: Define **words** that may have special or multiple meanings.*

All Terms, Including Acronyms and Abbreviations, Used in the Project must be defined at some point. List the most important ones here, and refer the reader to the glossary on page 90 for a complete list. (Note: that page number is a cross-reference, and will automatically be updated whenever the glossary moves.)

Content

A glossary containing the meanings of all names, acronyms, and abbreviations used within the requirements specification. Select names carefully to avoid giving a different, unintended meaning.

This glossary reflects the terminology in current use within the work area. You might also build on the standard names used within your industry.

For each term, write a succinct definition. The appropriate stakeholders must agree on this definition.

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Avoid abbreviations, as they introduce ambiguity, require additional translations, and could potentially lead to misinterpretation in the mind of anyone who is trying to understand your requirements. Ask your requirements analysts to replace all abbreviations with the correct term. This is easily done with word processors.

Acronyms are acceptable if they are completely explained by a definition.

Motivation

Names are very important. They invoke meanings that, if carefully defined, can save hours of explanations. Attention to names at this stage of the project helps to highlight

misunderstandings.

The glossary produced during requirements is used and extended throughout the project.

Examples

Truck: A vehicle used for spreading de-icing material on roads. "Truck" is not used to refer to goods-carrying vehicles.

BIS: Business Intelligence Service. The department run by Steven Peters to supply business intelligence for the rest of the organization.

Considerations

Make use of existing references and data dictionaries. Obviously, it is best to avoid renaming existing items unless they are so ambiguous that they cause confusion.

From the beginning of the project, emphasize the need to avoid homonyms and synonyms. Explain how they increase the cost of the project.

Your text goes here . . .

7b UML and Other Notation Used in This Document

*SV: Define **symbols**, **diagrams**, and other **notations** used. May refer to a standard reference, such as "UML Distilled" by Fowler. (Include in bibliography.)*

Content

This section should describe the specific meaning of any symbols, punctuation, subscripts, superscripts, etc. used commonly throughout the document. If following published or common standards, then it is acceptable to reference those standards, and list any exceptions.

Motivation

If the distinction between a hollow arrow and a solid arrow is significant, for example, then everyone must know exactly what the distinctions and meanings are.

Considerations

If a particular notation is only used in one place, say on a single diagram or in a single section, then it may be more appropriate to document it in that specific

location.

Example

This document generally follows the Version 2.0 OMG UML standard, as described by Fowler in [4]. Any exceptions are noted where used.

Your text goes here . . .

7c Data Dictionary for Any Included Models

*SV: Define **data structures** and **data properties** relative to this project, such as the contents of an employee record or the fact that student GPA ranges from 0.0 to 4.0 corresponding to letter grades of F to A. Data file formats may be referenced to documented standards, such as jpg or pdf.*

Content

Dictionary definitions of all information flows and stores used in models. Particular consideration should be given to defining the data attributes of all flows shown the context models (see sections 7 and 8).

This section should also contain any technical specifications for interfaces shown on the context models.

Motivation

The context diagram provides an accurate definition of the scope of the work being studied or the scope of the product to be built. This definition can be completely accurate only if the information flows bordering the scope have their attributes defined.

Examples

Road de-icing schedule = issue number + {road section identifier + treatment start time + critical start time + truck identifier} + depot identifier

As you progress through the requirements specification, define each of the elementary terms in detail.

Considerations

The dictionary provides a link between the requirements analysts and the implementers. The implementers add implementation details to the terms in the dictionary, defining how the data will be implemented. Also, implementers add terms

that are present because of the chosen technology and that are independent of the business requirements.

Your text goes here . . .

8 Relevant Facts and Assumptions

8a Facts

Feedback and data collected from the target users and the strategies players have to give them the best possible advantages will be under review and to understand how players are approaching the game. For example, if the damage dealt by the engine is too high, and can prevent players from competing, there could be scaling on the damage dealt and will be adjusted accordingly to maintain fairness while still keeping the integrity of the game.

With this in mind, data and feedback will also adjust the difficulty of the maps, if there are inconsistencies within the difficulties, like if on the hardest difficulty, players always land on the safest area, we could make the safer areas less rewarding, while increasing the reward for landing on the more difficult terrain

8b Assumptions

An assumption will be made that players can play with each other regardless of the platform they play on. This will encourage the multiplayer aspect of the game, while not burdening the consumer to have to restrict themselves to one platform to play with others. With this in consideration, the server hosting the multiplayer connections will need to allow for clients to connect on all platforms.