Phoenix Ambulatory Blood Pressure Monitoring System

System Requirements

Outline

Section		Explanation
1	Introduction	
2	Mission	
3	Scope	
3.1	Context	
3.2	Features	
4	Stakeholders	
5	Goals and Goal Conflicts	
6	Project Dictionary	
6.1	Glossary	
6.2	Actors (Operational Roles)	
6.3	Data Dictionary	
6.4	Naming Conventions	
7	Functional Requirements	
7.1	Use Cases	
7.2	Algorithms	The math
7.3	Information Model	
8	Operational Requirements	Quality-of-service requirements – criteria that can be used to judge the operation of the system, rather than specific behaviors.
8.1	Interfaces	Constraints on the interfaces identified in the context diagram and the use cases
8.1.1	Incoming	
8.1.2	Outgoing	
8.1.3	Physical Connectors	
8.2	Constraints	
8.2.1	Design constraints	Mandated technologies
8.2.2	Environment	Physical influences that the system shall accommodate. These include natural and man-made influences such as temperature, radiation, moisture, pressure, and chemicals.
8.2.3	Physical Constraints	▪ Size and dimension ▪ Weight ▪ Finish, colors, and labeling

Section	Explanation
8.2.4 Human Factors	
8.2.4.2 Cultural Requirements	Cultural influences that the system shall accommodate. Culture is the integrated human behavior patterns that are transmitted from generation to generation. It is a learned experience that originates from religious beliefs, country of origin, ethnic group, socioeconomic level, language, media, place of employment, and immediate family. To understand the culture of a region or market segment, the values and beliefs of the people must be known.
8.2.4.3 Human-System Interface	Look and feel
8.2.5 Legal and Political Requirements	Political influences that the system shall accommodate. International, federal, state, and local governmental agencies have laws and regulations that influence system requirements. Some governmental agencies may have enforcement organizations that check for compliance with their laws and regulations. Examples of governmental laws are copyright, patent, and trademark laws. Examples of governmental regulations are zoning, environmental hazards, waste, recycling, system safety, and health. Political influence changes as a function of political boundaries. What affects system requirements in one environment may be completely different in another. Therefore, it is important to conduct research in the political environment where the system will be manufactured and/or used to ensure that the system conforms to all of the governmental laws and regulations.
8.2.5.2 Intellectual Property	Constraints on licenses though not necessarily the licenses themselves
8.2.5.3 Regulations	
8.3 Usage Qualities	
8.3.1 Biocompatibility	The quality of not having toxic or injurious effects on biological systems.
8.3.2 Dependability	That property of a system such that reliance can justifiably be placed on the service it delivers.
8.3.2.2 Safety	A measure of the absence of unsafe software conditions. The absence of catastrophic consequences to the environment.
8.3.2.3 Privacy	A state of being free from unsanctioned intrusion.
8.3.2.4 Security (Integrity)	A condition of not being threatened, especially physically, psychologically, emotionally, or financially. The degree to which a system or component prevents unauthorized access to, or modification of, computer programs or data.

Section	Explanation
8.3.2.5 Reliability	The ability of a system or component to perform its required functions under stated conditions for a specified period of time.
8.3.2.6 Survivability	The quantified ability of a system, subsystem, equipment, process, or procedure to continue to function during and after a natural or man-made disturbance; e.g. nuclear electromagnetic pulse from the detonation of a nuclear weapon. For a given application, survivability must be qualified by specifying the range of conditions over which the entity will survive, the minimum acceptable level or post-disturbance functionality, and the maximum acceptable outage duration.
8.3.3 Usability	The ease with which a user can learn to operate, can prepare inputs for, and can interpret outputs of a system or component.
8.3.4 Performance	Speed, Efficiency, Resource consumption, Throughput, Response time.
8.3.5 Interoperability	The ability of two or more systems or components to exchange information and to use the information that has been exchanged.
9 Value Requirements	Cost and price
10 Developmental Requirements	Quality-of-implementation requirements
10.1 Change Concerns	
10.1.1 Maintainability	▪ [software] The ease with which a software system or component can be modified to correct faults, improve performance or other attributes, or adapt to a changed environment. ▪ [hardware] The ease with which a hardware system or component can be retained in, or restored to, a state in which it can perform its required functions.
10.1.2 Flexibility	The ease with which a system or component can be modified for use in applications or environments other than those for which it was specifically designed.
10.1.2.2 Extensibility	The ease with which a system or component can be modified to increase its storage or functional capability.
10.1.2.3 Scalability	The property of a system to either handle growing amounts of work in a graceful manner, or to be readily enlarged. The ease with which a system or component can be modified to fit the problem area.
10.1.2.4 Portability	The ease with which a system or component can be transferred from one hardware or software environment to another.

Section	Explanation
10.1.3 Reusability	The degree to which a software module or other work product can be used in more than one computer program or software system. Influenced by: ▪ Compliance with standards ▪ Incorporation of off-the-shelf products
10.2 Management Concerns	
10.2.1 Designability	
10.2.2 Verifiability	
10.2.3 Manageability	
11 Justifications	
12 Assumptions	
13 Agreed Priorities	