**[*Insert Name of System or Sub-System*] System Design Description**

*(The explanatory notes in italics should be removed in the submitted document)*

*The SDD should contain the sections and sub-sections as detailed below:*

**1. Scope.**

*This section shall be divided into the following paragraphs.*

* 1. **Identification.**

*This paragraph shall contain a full identification of the system to which this document applies (for example NS18).*

* 1. **Overview.**

*This paragraph shall briefly state the purpose of the system to which this document applies. It shall describe the general nature of the system; summarize the history of development, operation, and maintenance; identify current and planned operating sites; and list other relevant documents.*

* 1. **Document overview.**

*This paragraph shall summarize the purpose and contents of this document.*

**2. Referenced documents.**

*This section shall list the number, title, revision, and date of all documents referenced in this specification. Of particular importance is the relationship between the stakeholder’s requirements, the System Requirements Specification and the current document.*

1. **System design decisions.**

*This section shall be divided into paragraphs as needed to present system-wide design decisions, that is, decisions about the system’s design (how it will behave, from a user’s point of view, in meeting its requirements, ignoring internal implementation) and other decisions affecting the selection and design of system components. Design decisions that respond to requirements designated critical, such as those for safety or rules compliance, shall be placed in separate subparagraphs. If a design decision depends upon system states or modes, this dependency shall be indicated. Design conventions needed to understand the design shall be presented or referenced. Examples of system design decisions are the following:*

1. *Design decisions regarding inputs the system will accept and outputs it will produce, including interfaces with external systems and users.*
2. *Design decisions on overall system performance in response to each input or condition, including actions the system will perform, response times and other performance characteristics, selected equations/algorithms/rules, and handling of disallowed inputs or conditions.*
3. *Selected approach to meeting safety requirements.*
4. *Design and construction choices such as physical size, colour, shape, weight, materials, and markings.*
5. *Other system design decisions made in response to requirements such as selected approach to providing required flexibility, availability, and maintainability.*
6. **System architectural design.**

*This section shall be divided into the following paragraphs to describe the system architectural design. If part or all of the design depends upon system states or modes, this dependency shall be indicated. If design information falls into more than one paragraph, it may be presented once and referenced from the other paragraphs. Design conventions needed to understand the design shall be presented or referenced.*

1. *Identify the subsystems of the system. Each subsystem shall be assigned a unique identifier.*
2. *State the purpose of each subsystem and identify the system requirements and system- wide design decisions allocated to it. (Alternatively, the allocation of requirements may be provided in the section on requirements traceability*
3. *Identify each subsystem’s development status/type, if known (such as new development, existing subsystem to be reused as is, existing design to be reused as is, existing design or subsystem to be reengineered. For existing design or subsystems, the description shall provide identifying information, such as name, version, documentation references, location, etc.*
4. *Interface design. This paragraph shall be divided into subparagraphs to describe the interface characteristics of the sub-systems. It shall include both interfaces among the subsystems and their interfaces with external entities such as other systems and users. Note: There is no requirement for these interfaces to be completely designed at this level; this paragraph is provided to allow the recording of interface design decisions made as part of system architectural design.*
5. *Interface identification and diagram. This paragraph shall state the unique identifier assigned to each interface and shall identify the interfacing entities by name, number, version, as applicable. The identification shall state which entities have fixed interface characteristics (and therefore impose interface requirements on interfacing entities) and which are being developed or modified (thus having interface requirements imposed on them). One or more interface diagrams shall be provided, as appropriate, to depict the interfaces.*
   1. *(Interface XXX). This paragraph shall identify interface XXX and briefly identify the interfacing entities. It shall then describe the interface characteristics of one or both of the interfacing entities. If a given interfacing entity is not covered by this SDD (for example, an external system) but its interface characteristics need to be mentioned to describe interfacing entities that are, these characteristics shall be stated as assumptions or as "When [the entity not covered] does this, [the entity that is covered] will ...." This paragraph may reference other documents (such as data dictionaries, standards for protocols, and standards for user interfaces) in place of stating the information here.*
   2. *(Interface XXX+1).*
   3. *(Interface XXX+2).*
   4. *(Interface XXX+n).*
6. **Requirements traceability.**

*This paragraph shall contain:*

1. *Traceability from each subsystem identified in this SDD to the system requirements allocated to it. This is called backward traceability.*
2. *Traceability from each system requirement to the subsystem to which it is allocated. This is called forward traceability.*
3. **Notes.**

*This section shall contain any general information that aids in understanding this document (e.g., background information, glossary, rationale). This section shall contain an alphabetical listing of all acronyms, abbreviations, and their meanings as used in this document and a list of any terms and definitions needed to understand this document.*

1. **Appendices.**

*Appendices may be used to provide information published separately for convenience in document maintenance (e.g., charts, classified data). As applicable, each appendix shall be referenced in the main body of the document where the data would normally have been provided. Appendices may be bound as separate documents for ease in handling. Appendices shall be lettered alphabetically (A, B, etc.).*