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## System Maintenance Manual template

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## **1. INTRODUCTION**

### **1.1 Purpose of the document**

<< This document describes how the completed system will be maintained. It covers both hardware and software.

The Maintenance Manual is prepared incrementally during system implementation, and revised as needed during on-going system operation. The first version should be produced as early in the project as possible, to ensure that operation and maintenance needs are understood and planned for. This initial version may be quite limited in content, focusing on issues such as staffing, funding, and documentation that need to be worked on well in advance of system start-up. Details of specific maintenance activities can be added as needed, and after the system is developed and its specific characteristics are known.

This document is a mandatory input for the system Critical Design Review and later for the system Operational Readiness Review [1].

This template conforms to ISO 15289 [2] and ISO 13460 [3].>>

### **1.2 Definitions, acronyms and abbreviations**

<b>Abbreviation</b>	<b>Explanation of abbreviation</b>
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### **1.3 References**

[1] Systems Engineering Management Plan, ESS-0002908

[2] ISO/IEC/IEEE 15289:2011-11-1

[3] SS-EN 13460:2009

[4] ESS concept of operations, ESS-0003640.

<<Please amend with relevant text that pertains to the above subject matter.....>>

## **2. SYSTEM CHARACTERISTICS**

### **2.1 System purpose**

<<This short section gives a brief overview of the main functions of system to be built, its intended purpose.>>

### **2.2 System overview**

<<This is an overview of the system to be developed. This describes what it interfaces with, its states, modes and associated functions, and the system architecture. References to Interface descriptions, System Architecture Description and Concept of Operations document are referred here [1].>>

### **3. FACILITIES AND RESOURCES**

<<This section identifies the facilities and resources to be used for system maintenance. It should cover at least the following elements:

- Personnel, including positions, general qualifications, and specialty skills needed and the effort as a percentage of time dedicated to system maintenance.
- Building space, including for example, rooms and space within rooms, also specialty areas such as: workshops, raised floors, additional air conditioning, additional power, and communications trunks. This information is described in an Interface Description Document to be quoted here.
- Furniture, equipment, and tools as a part list.
- Training needed for operations personnel, including off-site courses, on-site courses, and hands-on training on the system itself.
- Funding, including the amount needed each year and attempt to predict future costs, including unusual items such as end-of-life replacement.>>

### **4. MAINTENANCE**

<<This section describes procedures governing the maintenance of the system and support its availability. It should address both preventive and corrective activities needed to keep the system fully operational when applicable.

In general, the following information should be included in this section when applicable:

- Preventive maintenance activities during shutdown period or other triggers, their associated scheduled periods,
- Corrective maintenance activities, and the relative urgency of each,
- Rules with regard to purchase of spare equipment, manufacturer or vendor maintenance agreements or extended warranties, and third party maintenance contracts
- Parameters used to monitor the effectiveness of system maintenance, and how those data are to be collected and reported
- Procedures for coordination with operations personnel and activities
- Perimeter of responsibilities relative to maintenance by other parties and procedures for coordination with personnel responsible for interconnected systems or components that are not part of this system
- Disassembly procedure with check out
- Fault diagnosis techniques,
- Re assembly and check out sequence (testing, inspecting).

This chapter is subdivided in several maintenance cases translated into procedures as needed.

Each maintenance step for a given case shall point to the relevant maintenance level defined in [4].

Each procedure shall satisfy the safety requirements defined in the Requirement Specification of the system.

Each procedure should include an estimate of the cost of each step to show that the maintenance satisfies the funding profile and should support the overall operational schedule.

Each case should point to applicable standards, methods, required personnel and skills as identified in section above and tools >>