

## SmartOS – Voice/Chat-Based AI Operating SystemAssistant

Version 1.0

Prepared for

myOnsite Healthcare, LLC.

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## **Document Control**

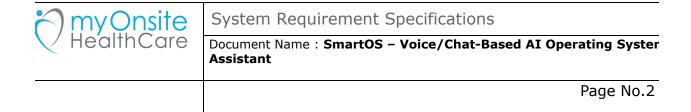
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# SmartOS - Voice/Chat-Based AI Operating System Assistant

## **Project Brief**

SmartOS is a lightweight AI OS assistant that transforms natural language (text or voice) into executable system tasks. Designed as a 'local ChatGPT meets Windows Spotlight meets AutoGPT', it empowers users to control and operate desktop systems using plain English commands. From writing essays to opening apps and toggling connectivity, SmartOS enables hands-free, intelligent automation on the user's OS.

Time Allocation: 5 hours

**Focus Areas:** - Voice Assistant Integration - Desktop Automation - AI Command Parsing - System Control Layer

### System Overview

- Processes voice or text commands to understand intent
- Executes system-level actions (e.g., open apps, connect WiFi, write files)
- Automates content creation and OS navigation
- Maintains fallback chat interface for manual operations

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### **Data & Requirements**

- Input data: Natural language requirements, user stories, or commands
- Quantity: Unlimited
- Evaluation dataset: 50 test cases split across 3 tiers (easy: 40%, medium: 40%, hard: 20%)
- Characteristics: Ambiguity, varied domain language, real-world scenarios

#### **Technical Requirements**

- Primary: Natural Language Understanding (NLU), Task Execution Automation
- Secondary: Headless Browser Automation / Shell-level OS commands
- Integration: Git, System APIs, Voice Recognition, File Management

### **Advanced/Challenging Requirements**

- Dynamic command interpretation and fallback handling
- Screenshot capture and error logging (for TestSmith)
- Background execution support
- Multi-modal interaction (text/voice)

#### **Output Schema / API Specification**

- JSON and Excel-based result logging
- Fields: Test Name, Description, Status, Error, Screenshot link
- CLI/Voice return messages and file output for SmartOS

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#### **Evaluation Framework**

- Metric 1: Accuracy (Manual validation of execution correctness)
- Metric 2: Latency (Time to execute task)
- Metric 3: Robustness (Recovery from bad inputs)
- Performance benchmarking across all task categories

#### **System Adaptation / Flexibility Requirements**

- Must support JSON-based input and output
- Easily adaptable to different domains (e.g., healthcare, finance)
- Hot-swap between CLI and GUI (SmartOS) or languages (TestSmith AI)

#### **Implementation Challenges**

- Parsing and grounding ambiguous natural language
- Handling OS-level security and permission contexts
- Maintaining deterministic outputs for automated evaluation

### **Evaluation Complexity**

- Tier 1: Simple tasks (e.g., open app)
- Tier 2: Multi-step tasks (e.g., edit and save a file)
- Tier 3: Integrative tasks (e.g., build & deploy project or run multi-case tests)

#### **Advanced Challenge Specifications**

- Zero-downtime requirement for CLI tools
- API hot-reload for plugin extensions
- Multi-tiered fallback strategies for assistant

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#### **Deliverables**

- 1. System:
  - Executable packages or Docker containers
- 2. Evaluation:
  - Test cases, logs, metrics dashboard
- 3. Documentation:
  - Installation guide, user manual, API specs

#### **Success Criteria**

- Pass rate >90% on evaluation dataset
- Response time <3 seconds for 80% of tasks
- Full autonomous task execution without manual correction