

CLOUD-BASED FLEET MANAGEMENT SYSTEM FOR CLEANING ROBOTS

CLOUD-BASED FLEET MANAGEMENT SYSTEM

PROPRIETARY TECHNOLOGY DOCUMENTATION

NaviFloor Robotics, Inc.

Document Version: 2.4

Last Updated: January 11, 2024

1. SYSTEM OVERVIEW

1. This document describes the proprietary cloud-based fleet management system for cleaning robots.

2. The System comprises the following core components:

- a) Central Fleet Control Platform (CFCP)
- b) Distributed Navigation Modules (DNMs)
- c) Real-time Optimization Engine (ROE)
- d) Multi-Surface Adaptive Navigation System (MANS)

2. INTELLECTUAL PROPERTY RIGHTS

1. The System and all its components are protected by the following intellectual property:

- a) U.S. Patent No. 11,487,XXX: "Method and System for Autonomous Navigation and Fleet Management Using Adaptive Terrain Mapping"
- b) U.S. Patent No. 11,592,XXX: "Multi-Surface Navigation System for Autonomous Mobile Robots"
- c) U.S. Copyright Registration No. TX-9-XXX-XXX covering the System Software

code - 2 -

d) Multiple pending patent applications as detailed in Schedule A

2. All intellectual property rights, including but not limited to patents, c

3. TECHNICAL SPECIFICATIONS

1. Central Fleet Control Platform (CFCP):

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Cloud infrastructure: AWS GovCloud (US) deployment

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Processing capacity: Up to 500 simultaneous robot connections

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Real-time data processing: 1000 transactions per second

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Redundancy: 99.99% uptime guarantee

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Security: SOC 2 Type II certified

2. Distributed Navigation Modules (DNMs):

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Processing: Edge computing architecture

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Sensor integration: LiDAR, depth sensors, accelerometers

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Communication protocol: Proprietary NaviFloor Secure Protocol (NSP)

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Update frequency: 100Hz

4. SECURITY MEASURES

1. The System implements the following security measures:

- a) End-to-end encryption using AES-256
- b) Multi-factor authentication for all access points
- c) Real-time threat monitoring and detection
- d) Automated security patch deployment
- e) Regular penetration testing and security audits

2. All data transmission and storage comply with ISO 27001 standard

5. PROPRIETARY ALGORITHMS

1. The System employs the following proprietary algorithms:

- a) TerrainMap(TM) - Advanced surface recognition and mapping

b) Navigore(TM) - Path optimization and collision avoidance

c) FleetSync(TM) - Robot coordination and task allocation

d) AdaptLearn(TM) - Machine learning for performance optimization

2. These algorithms are protected as trade secrets and are subject to

6. COMPLIANCE AND CERTIFICATION

1. The System has obtained the following certifications:

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ISO 9001:2015 Quality Management System

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IEC 61508 Functional Safety Certification

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CE Marking for European Market Compliance

7. CONFIDENTIALITY

1. All information contained in this document is strictly confidential and
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9. DOCUMENT CONTROL

Version History:

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Approved by:

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