USER INTERFACE FOR ROBOT CONTROL AND MAPPING

USER INTERFACE FOR ROBOT CONTROL A

PROPRIETARY AND CONFIDENTIAL

NaviFloor Robotics, Inc.

Version 3.2 | Last Updated: January 11, 2024

1. OVERVIEW AND SCOPE

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1. This document describes the proprietary user interface system ("UI System

2. The UI System encompasses both the graphical user interface and underly

2. TECHNICAL SPECIFICATIONS

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1. Core Interface Components

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Multi-modal control dashboard

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Real-time terrain visualization engine

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Fleet coordination command center

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Dynamic path optimization interface

Emergency override system

-

Multi-level mapping renderer

-

2. Input Methods

-

Touch-screen gesture control

-

Voice command integration

-

Remote web-based access

-

Mobile device compatibility

Hardware control panel interface

-

3. Display Elements

-

3D terrain visualization

-

Real-time robot status indicators

-

Heat maps for traffic patterns

-

Path planning overlays

-

Safety zone demarcation

Battery level monitoring

-

Maintenance status tracking

3. PROPRIETARY FEATURES

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1. Protected Elements

The following elements constitute trade secrets and proprietary intellectual

property of the Company:

a) Adaptive Surface Recognition Algorithm (USPTO Application #16/234,5

b) Multi-Robot Coordination Protocol

c) Dynamic Obstacle Avoidance System

d) Real-Time Path Optimization Engine

e) Emergency Override Protocol

f) Custom UI Widget Library

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2. Visualization Technology

The proprietary visualization engine incorporates:

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Point cloud processing algorithms

-

Real-time mesh generation

-

Surface texture analysis

-

Depth mapping integration

LiDAR data processing

-

Obstacle classification system

4. SECURITY PROTOCOLS

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1. Access Control

-

Role-based authentication system

-

Multi-factor authentication

-

Session management

Audit logging

-

Remote access security

-

Emergency access protocols

-

2. Data Protection

-

End-to-end encryption

-

Secure data storage

-

Backup systems

Recovery protocols

-

Data retention policies

5. INTEGRATION SPECIFICATIONS

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1. API Documentation

-

RESTful API endpoints

-

WebSocket connections

-

Authentication tokens

Rate limiting

-

Error handling

-

Version control

-

2. Third-Party Integration

-

Enterprise resource planning (ERP) systems

-

Warehouse management systems (WMS)

-

Manufacturing execution systems (MES)

Building management systems

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Safety systems

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Asset tracking systems

6. INTELLECTUAL PROPERTY RIGHTS

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1. The UI System and all its components are protected under U.S. and interna

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Patent applications (as listed in Section 3.1)

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Copyright registration TX 8-925-341

Trade secret protection

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Trademark registration for "NaviFloor Platform"

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2. All rights, title, and interest in and to the UI System, including all intellect

7. CONFIDENTIALITY

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1. This document contains confidential and proprietary information of NaviF

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2. Distribution of this document is restricted to authorized personnel only. Ur

8. CERTIFICATION

The undersigned hereby certifies that this document accurately represents the

System specifications as of the date indicated below.

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NAVIFLOOR ROBOTICS, INC.

**By: _**

Dr. Elena Kovacs

Chief Research Officer

**Date: _**

Approved by:

Marcus Depth

Chief Technology Officer

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# 9. DOCUMENT CONTROL

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