TERRAIN-RESPONSIVE ROBOT SPEED CONTROL SYSTEM

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TECHNICAL SPECIFICATION AND INTELLECTUAL

PROPRIETARY AND CONFIDENTIAL

NaviFloor Robotics, Inc.

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1. SYSTEM OVERVIEW

1 This document describes the proprietary Terrain-Responsive Robot

2 The System comprises an integrated hardware-software solution tha

2. TECHNICAL SPECIFICATIONS

1 Core Components:

a) TerrainSense(TM) LiDAR array (Patent No. US 11,XXX,XXX)

b) Depth-mapping processor unit (Model NF-DPU-2023)

c) Adaptive Speed Control Algorithm v4.2

d) Environmental Response Matrix(TM) software

2 Operational Parameters:

a) Scanning frequency: 240Hz

b) Terrain resolution: 0.5mm

c) Response latency: <5ms

d) Speed adjustment range: 0.1 - 2.5 m/s

e) Surface type recognition: 12 distinct categories

3. INTELLECTUAL PROPERTY PROTECTION

1 Patents

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US Patent No. 11,XXX,XXX: "Method and System for Real-time Terra

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US Patent Application No. 17/XXX,XXX: "Dynamic Speed Control Sys

-

International PCT Application PCT/US2023/XXXXX

2 Trade Secrets

Proprietary surface recognition algorithms

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Calibration methodologies for multi-surface environments

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Machine learning training datasets for terrain classification

3 Copyrights

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TerrainSense(TM) software suite (Reg. No. TXu-2-XXX-XXX)

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Environmental Response Matrix(TM) codebase

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Technical documentation and implementation guides

4. SECURITY PROTOCOLS

1 The System incorporates the following security measures:

a) AES-256 encryption for all data transmission

b) Secure boot verification

c) Hardware-based security modules

d) Encrypted firmware updates

e) Access control authentication

2 All system components are subject to:

a) Regular security audits

b) Penetration testing

c) Vulnerability assessments

d) Compliance verification

5. IMPLEMENTATION REQUIREMENTS

1 Hardware Requirements:

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Minimum processor: Intel i7-9750H or equivalent

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RAM: 16GB minimum

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Storage: 256GB SSD

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Dedicated GPU: NVIDIA RTX 2060 or better

2 Software Requirements:

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Operating System: Robot Operating System (ROS) 2.0

- NaviFloor Core Framework v3.5 or higher
- TerrainSense(TM) Runtime Environment
- Python 3.9+ with specified dependencies

6. CONFIDENTIALITY AND USAGE RESTRICTIONS

1 This document and all information contained herein are strictly confi

2 Access to this documentation is restricted to authorized personnel w

3 No part of this System may be reproduced, modified, or distributed w

7. WARRANTY AND LIABILITY

1 The System is provided "as is" with no warranties, express or implie

2 NaviFloor Robotics, Inc. shall not be liable for any damages arising

8. CERTIFICATION

The undersigned hereby certifies that this document accurately repres
technical specifications and intellectual property status of the
Terrain-Responsive Robot Speed Control System as of the date indic

NAVIFLOOR ROBOTICS, INC.

By:

Dr. Elena Kovacs

Chief Research Officer

Date: January 11, 2024

By:

Marcus Depth

Chief Technology Officer

Date: January 11, 2024

9. DOCUMENT CONTROL

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