AUTOMATED DOCKING AND CHARGING SYSTEM

AUTOMATED DOCKING AND CHARGING SY

TECHNICAL SPECIFICATION AND INTELLECTUAL

NaviFloor Robotics, Inc.

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1. PROPRIETARY NOTICE AND CONFIDENTIALITY

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Robotics, Inc. ("NaviFloor"). Any disclosure, reproduction, or use of th
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2. SYSTEM OVERVIEW

1. The Automated Docking and Charging System ("ADCS") comprises

2. The ADCS integrates with NaviFloor's Multi-surface Adaptive Navig

3. INTELLECTUAL PROPERTY RIGHTS

1. **Patents**

-

US Patent No. 11,XXX,XXX: "Method and System for Precision Docki

US Patent Application No. 17/XXX,XXX: "Advanced Charging Station

- International Patent Application PCT/US2023/XXXXX: "Multi-Robot C

2. **Registered Trademarks**

- NaviDock(TM) (US Registration No. 88/XXX,XXX)
- ChargeSync(TM) (US Registration No. 88/XXX,XXX)
- PowerQueue(TM) (US Registration No. 88/XXX,XXX)

4. TECHNICAL SPECIFICATIONS

1. **Docking Mechanism**

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Precision alignment tolerance: 2mm

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Approach vector optimization algorithm

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Multi-sensor fusion system incorporating:

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LiDAR-based position detection

-

Infrared guidance markers

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Ultrasonic proximity sensors

2. **Charging Interface**

Maximum charging capacity: 48V DC / 40A

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Automatic voltage regulation

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Smart charging protocol with battery health monitoring

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Bi-directional communication protocol

5. PROPRIETARY COMPONENTS

1. **Hardware Components**

-

NaviDock(TM) charging station assembly

-

Precision contact plates with gold-plated connectors

-

Custom-designed alignment guides

-

Proprietary charging controller board

2. **Software Components**

-

ChargeSync(TM) management system

-

PowerQueue(TM) scheduling algorithm

-

Battery lifecycle optimization software

-

Fleet charging coordination system

6. THIRD-PARTY DEPENDENCIES

1. The ADCS incorporates the following licensed third-party technolog

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ROS 2 Navigation Stack (Apache 2.0 License)

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OpenCV Computer Vision Library (BSD License)

-

Qt Framework for GUI components (LGPL v3)

7. TRADE SECRETS

1. The following components constitute protected trade secrets:

-

Charging station approach vector calculations

Power distribution optimization algorithms

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Fleet charging prioritization methods

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Battery degradation prediction models

8. DEVELOPMENT HISTORY

1. Original development commenced March 2019

2. First production release: Version 1.0 (June 2020)

3. Current version: 3.2 (November 2023)

9. REGULATORY COMPLIANCE

1. The ADCS has been certified to meet:

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UL 1741 Safety Standards

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CE Mark Requirements

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IEC 61851 Electric Vehicle Charging Standards

-

ISO/TS 15066 Robot Safety Standards

10. WARRANTY AND LIABILITY

1. NaviFloor warrants the ADCS against defects in materials and work

2. This warranty is subject to the terms and conditions set forth in the

11. CERTIFICATION

The undersigned hereby certifies that the information contained in this
is accurate and complete as of the date below.

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**By:** _

Dr. Elena Kovacs

Chief Research Officer

NaviFloor Robotics, Inc.

Date: December 15, 2023

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12. DOCUMENT CONTROL

Version 3.2

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