AUTOMATED CALIBRATION SYSTEM FOR ROBOT SENSORS

AUTOMATED CALIBRATION SYSTEM FOR

TECHNICAL SPECIFICATION AND INTELLECTUA

Document ID: IP-ACS-2023-114

Effective Date: January 11, 2024

Version: 3.2

Classification: CONFIDENTIAL

1. SYSTEM OVERVIEW

1. This document describes the proprietary Automated Calibration System ("

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2. The ACS comprises both hardware and software components designed to

2. TECHNICAL SPECIFICATIONS

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1. **Hardware Components**

a) Multi-axis calibration platform with precision actuators

b) Reference sensor array featuring:

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High-precision LiDAR reference units (accuracy: ±0.5mm)

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Depth-sensing calibration targets

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Multi-surface material samples for reflectivity testing

c) Environmental control chamber for temperature stabilization

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2. **Software Components**

a) Proprietary calibration algorithms (Patent Application No. 16/789,432)

b) Real-time sensor data processing module

c) Machine learning-based drift compensation system

d) Automated calibration scheduling and tracking system

3. INTELLECTUAL PROPERTY RIGHTS

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1. The Company maintains exclusive ownership of all intellectual property ri

a) Patents and patent applications

b) Trade secrets

c) Proprietary algorithms

d) Technical documentation

e) Source code

f) Hardware designs

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2. **Patent Portfolio**

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US Patent No. 11,234,567: "Method for Automated Multi-Sensor Calibration

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US Patent Application No. 16/789,432: "Self-Learning Sensor Calibration Sy

4. CONFIDENTIALITY AND PROTECTION

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1. All information contained herein is deemed confidential and proprietary to

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2. Access to this documentation is restricted to authorized personnel who hav

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3. Implementation of the following security measures is mandatory:

a) Encrypted storage of all technical documentation

b) Access logging and monitoring

c) Regular security audits

d) Physical security controls for calibration facilities

5. TECHNICAL SPECIFICATIONS AND PERFORMA

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1. **Calibration Accuracy**

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Position accuracy: ±0.1mm

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Angular accuracy: ±0.02 degrees

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Depth measurement accuracy: ±0.3mm

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Calibration time: <45 minutes per unit

2. **Operating Parameters**

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Temperature range: 10°C to 40°C

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Humidity: 20% to 80% non-condensing

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Power requirements: 208V 3-phase, 30A

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Network connectivity: Gigabit Ethernet

6. COMPLIANCE AND CERTIFICATION

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1. The ACS has been certified to meet the following standards:

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ISO 9001:2015

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CE Marking (European Conformity)

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UL 1740 (Robotics Equipment)

7. WARRANTY AND LIMITATION OF LIABILITY

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1. The Company warrants the ACS system against defects in materials and w

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2. THE COMPANY MAKES NO OTHER WARRANTIES, EXPRESS OR

8. CERTIFICATION

The undersigned hereby certifies that this document accurately represents the technical specifications and intellectual property rights of the Automated Calibration System as of the Effective Date.

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NAVIFLOOR ROBOTICS, INC.

**By: _**

Dr. Elena Kovacs

Chief Research Officer

**Date: _**
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By: _

Marcus Depth

Chief Technology Officer

Date: _

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## 9. DOCUMENT CONTROL

Version History:

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3.2: Current version (January 11, 2024)

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3.1: Updated patent portfolio (November 15, 2023)

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3.0: Major revision incorporating ML capabilities (August 30, 2023)

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2.1: Technical specifications update (May 12, 2023)

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2.0: Initial release (March 1, 2023)