SENSOR CALIBRATION METHOD FOR FLOOR MAPPING ROBOTS

SENSOR CALIBRATION METHOD FOR FLOO

PROPRIETARY AND CONFIDENTIAL

NaviFloor Robotics, Inc.

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1. OVERVIEW AND SCOPE

1. This document describes the proprietary sensor calibration method

2. The calibration method detailed herein applies specifically to the int

2. DEFINITIONS

1. "Calibration Protocol" means the systematic process of aligning and

2. "Sensor Array" means the complete assembly of LiDAR sensors, d

3. "Reference Framework" means the standardized spatial coordinate

3. CALIBRATION METHODOLOGY

1. Initial Sensor Configuration

a) Primary LiDAR unit alignment to established Reference Framework

b) Secondary sensor array positioning relative to primary unit

c) Verification of mechanical mounting tolerances (0.02mm)

2. Environmental Parameters

a) Ambient temperature range: 15 C to 35 C

b) Humidity threshold: 65% RH

c) Lighting conditions: 200-1000 lux

3. Calibration Sequence

a) Zero-point establishment using precision calibration plate

b) Multi-point verification across 9 reference positions

c) Dynamic offset compensation algorithm application

d) Cross-validation with redundant sensor arrays

4. PROPRIETARY ELEMENTS

1. The following elements constitute protected intellectual property:

a) Adaptive sensor fusion algorithms

b) Dynamic calibration compensation methods

c) Multi-surface reference point mapping

d) Terrain irregularity detection protocols

2. Implementation of calibration methodology incorporates Company's

a) NaviCore(TM) Calibration Suite v4.2

b) TerrainSync(TM) Algorithm Package

c) SensorFusion(TM) Integration Framework

5. QUALITY ASSURANCE PROTOCOLS

1. Validation Requirements

a) Minimum accuracy threshold: 99.98%

b) Maximum permissible deviation: 0.5mm

c) Calibration stability period: 2000 operational hours

2. Documentation Requirements

a) Calibration log maintenance

b) Environmental condition records

c) Deviation incident reports

d) Maintenance history

6. CONFIDENTIALITY AND PROTECTION

1. This document contains trade secrets and confidential information c

2. Access to this methodology is restricted to authorized personnel wh

3. No portion of this methodology may be disclosed, reproduced, or u

7. REVISION AND CONTROL

1. This document shall be reviewed and updated annually or upon sig

2. Revision history shall be maintained in Company's document contr

3. Implementation of methodology modifications requires approval fro

a) Chief Technology Officer

b) Chief Research Officer

c) Quality Assurance Director

8. CERTIFICATION

The undersigned hereby certify that this calibration methodology has b

reviewed and approved for implementation across all Company AMR

APPROVED BY:

Marcus Depth

Chief Technology Officer

Date: December 15, 2023

Dr. Elena Kovacs

Chief Research Officer

Date: December 15, 2023

9. LEGAL NOTICE

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