OPERATIONS DOCUMENT 381

STANDARD OPERATING PROCEDURES FOR AUTONOMOUS MOBILE ROBOT DEPLOYMENT AND MAINTENANCE

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1. PURPOSE AND SCOPE

1. This Operations Document ("Document") establishes binding operational procedures and protocols for the deployment, maintenance, and decommissioning of Polar Dynamics Robotics, Inc. ("Company") Autonomous Mobile Robot ("AMR") systems in temperature-controlled environments.

2. This Document applies to all Company personnel involved in AMR operations, including but not limited to field technicians, deployment specialists, maintenance engineers, and operational supervisors.

2. DEFINITIONS

1. "IceNav System" means the Company's proprietary cold-environment navigation and operation platform.

2. "Critical Operating Temperature" means any ambient temperature below -30 C (-22 F).

3. "Deployment Zone" means any customer facility or operational area where Company AMRs are installed and operational.

4. "Thermal Management Protocol" or "TMP" means the Company's standardized procedures for maintaining optimal AMR operating temperatures.

3. DEPLOYMENT PROCEDURES

1. Pre-Deployment Assessment

a) Conduct comprehensive site survey including thermal mapping

b) Verify facility compliance with Company's Technical Specification Document 274

c) Document all thermal transition zones and temperature gradients

d) Validate IceNav System compatibility with facility layout

2. Installation Requirements

a) Follow Company's Cold Environment Installation Protocol (CEIP-2023)

b) Install thermal monitoring beacons at prescribed intervals

c) Calibrate IceNav sensors to facility-specific conditions

d) Verify redundant safety systems functionality

4. MAINTENANCE PROTOCOLS

1. Scheduled Maintenance

a) Perform weekly diagnostic scans of thermal management systems

b) Conduct monthly actuator stress tests

c) Calibrate navigation sensors quarterly

d) Replace thermal interface materials per Schedule A

2. Emergency Procedures

a) Implement immediate shutdown if core temperature exceeds specifications

b) Follow Emergency Response Protocol 47-B for thermal system failures

c) Document all emergency events in Company's incident management system

5. OPERATIONAL SAFETY REQUIREMENTS

1. All personnel must maintain current certification in:

a) Cold Environment Operations (CEO-Level 2)

b) IceNav System Management

c) Emergency Response Procedures

d) Thermal System Maintenance

2. Personal Protective Equipment

a) Required for all maintenance activities below -10 C

b) Must comply with Company Safety Standard 142

c) Subject to monthly inspection and documentation

6. QUALITY CONTROL AND COMPLIANCE

1. Documentation Requirements

a) Maintain detailed deployment logs

b) Record all maintenance activities in Company's central database

c) Update thermal performance metrics daily

d) Submit monthly compliance reports to Quality Control

2. Performance Monitoring

a) Track key performance indicators per Schedule B

b) Conduct quarterly system audits

c) Validate navigation accuracy monthly

d) Monitor thermal system efficiency weekly

7. PROPRIETARY INFORMATION

1. All technical specifications, procedures, and protocols contained herein constitute confidential and proprietary information of the Company.

2. Disclosure of any portion of this Document to third parties is strictly prohibited without prior written authorization from the Company's Legal Department.

8. AMENDMENTS AND UPDATES

1. This Document may be amended or updated by the Company at any time, with notice to relevant personnel.

2. All amendments must be approved by the Chief Operations Officer and Chief Technology Officer.

9. EXECUTION AND ACKNOWLEDGMENT

The undersigned hereby acknowledges receipt and understanding of this Operations Document and agrees to comply with all procedures and requirements contained herein.

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**Date: _**

**Name:**

**Title:**
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Signature:

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## SCHEDULES

Schedule A: Thermal Interface Material Replacement Intervals

Schedule B: Key Performance Indicators and Monitoring Requirements

*[Schedules attached separately]*

APPROVED BY:

Sarah Nordstrom

Chief Operations Officer

Polar Dynamics Robotics, Inc.

Marcus Chen

Chief Technology Officer

Polar Dynamics Robotics, Inc.
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