OPERATIONS DOCUMENT 387

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 robots ("AMRs") 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 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 276

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) Calibrate thermal sensors per Document 392

c) Install redundant emergency stop systems

d) Verify charging station thermal management systems

4. MAINTENANCE PROTOCOLS

1. Scheduled Maintenance

a) Perform weekly diagnostic scans of IceNav System

b) Conduct monthly actuator performance assessments

c) Execute quarterly thermal management system validation

d) Document all maintenance activities in Company's secure cloud platform

2. Emergency Maintenance

a) Response time requirements:

- Critical failures: 2 hours
- Non-critical failures: 24 hours

b) Follow Emergency Response Protocol Document 445

c) Maintain spare parts inventory per Appendix A

5. SAFETY AND COMPLIANCE

1. Safety Requirements

a) Maintain compliance with ANSI/RIA R15.08-1-2020

b) Follow OSHA cold storage workplace safety guidelines

c) Implement Company's proprietary safety protocols per Document 334

2. Risk Management

a) Maintain current risk assessment documentation

b) Update safety protocols based on operational data

c) Conduct monthly safety reviews with facility operators

6. PERFORMANCE MONITORING

1. The Company shall monitor and record:

a) AMR uptime percentage

b) Navigation accuracy metrics

c) Thermal management system efficiency

d) Battery performance in cold environments

e) Emergency stop system response times

2. Performance Reports

a) Generate weekly performance summaries

b) Conduct monthly trend analysis

c) Provide quarterly performance reviews to facility operators

7. DECOMMISSIONING PROCEDURES

1. AMR Removal

a) Follow Company's Decommissioning Checklist

b) Secure all proprietary components

c) Remove IceNav System software

d) Document final performance metrics

2. Data Management

a) Archive operational data per Document 556

b) Execute data deletion protocols

c) Provide decommissioning certificates

8. CONFIDENTIALITY

1. All information contained herein is confidential and proprietary to Polar Dynamics Robotics, Inc.

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

9. AMENDMENTS

1. The Company reserves the right to modify this Document at any time.

2. All amendments shall be documented and communicated to relevant personnel within 48 hours of approval.

APPROVAL AND EXECUTION

APPROVED AND ADOPTED by the undersigned authorized representative of Polar Dynamics Robotics, Inc.

Date: _

By:

Sarah Nordstrom

Chief Operating Officer

Polar Dynamics Robotics, Inc.

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