OPERATIONS DOCUMENT 389

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 Installation Manual rev. 2024-A

b) Calibrate thermal sensors per Protocol TD-892

c) Install redundant emergency stop systems

d) Verify wireless communication coverage throughout deployment zone

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 central database

2. Emergency Maintenance

a) Response time requirements:

- Critical failures: 2 hours
- Non-critical failures: 8 hours
- System warnings: 24 hours

b) Follow Emergency Response Protocol ERP-103

c) Maintain spare parts inventory per Schedule A

5. SAFETY REQUIREMENTS

1. Personnel Safety

a) All technicians must complete Company's Cold Environment Safety Training

b) Mandatory use of approved cold-weather PPE

c) Strict adherence to buddy system protocol below -40 C

2. Equipment Safety

a) Implement thermal shock prevention measures

b) Monitor battery performance in extreme conditions

c) Maintain emergency shutdown capabilities

6. QUALITY CONTROL

1. Performance Metrics

a) Monthly uptime requirement: 98.5%

b) Navigation accuracy tolerance: 5mm

c) Thermal management efficiency: 95%

2. Documentation Requirements

a) Maintain detailed deployment logs

b) Record all maintenance activities

c) Document any operational anomalies

d) Submit monthly performance reports

7. COMPLIANCE AND REPORTING

1. Regulatory Compliance

a) Adhere to all applicable OSHA regulations

b) Maintain ANSI/RIA R15.08 compliance

c) Follow ISO 10218-1 and 10218-2 standards

2. Internal Reporting

a) Submit weekly operational status reports

b) Report safety incidents within 24 hours

c) Maintain updated certification records

8. PROPRIETARY INFORMATION

1. All technical specifications, procedures, and protocols contained herein are confidential and proprietary to Polar Dynamics Robotics, Inc.

2. Unauthorized disclosure or distribution is strictly prohibited and may result in legal action.

9. AMENDMENTS AND UPDATES

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

relevant personnel.

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

AUTHORIZATION

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

Date: January 1, 2024

Sarah Nordstrom

Chief Operations Officer

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Chief Technology Officer

DOCUMENT CONTROL

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