

ROBOT CONFIGURATION MANAGEMENT GUIDE

Polar Dynamics Robotics, Inc.

Document Version: 2.4

Effective Date: January 15, 2024

Document Control #: PDR-RCM-2024-01

1. PURPOSE AND SCOPE

1. This Robot Configuration Management Guide ("Guide") establishes mandatory procedures and protocols for the configuration, modification, and version control of all Polar Dynamics Robotics, Inc. ("Company") autonomous mobile robot ("AMR") systems, with particular emphasis on IceNav(TM) platform implementations.
2. This Guide applies to all Company employees, contractors, and authorized third parties involved in the configuration, programming, or modification of Company AMR systems.

2. DEFINITIONS

1. "Configuration Parameters" means all software settings, mechanical adjustments, and control variables that define an AMR's operational characteristics.
2. "IceNav(TM) Core Settings" refers to proprietary navigation and thermal management parameters essential for cold-environment operation.
3. "Mission-Critical Parameters" means configuration settings that directly impact safety systems, collision avoidance, or thermal regulation.

3. CONFIGURATION MANAGEMENT PROCEDURES

1. Version Control Requirements
 - a) All configuration changes must be documented in the Company's Configuration Management Database (CMDB).
 - b) Each configuration version shall receive a unique identifier following format:
PDR-[SerialNumber]-[DateCode]-[VersionNumber]
 - c) IceNav(TM) Core Settings modifications require Chief Robotics Officer approval.

2. Change Management Protocol

a) Configuration changes must follow the Company's three-tier approval process:

- Level 1: Technical review by qualified engineer
- Level 2: Safety assessment by Quality Assurance
- Level 3: Operational validation in test environment

b) Emergency configuration changes require documented approval from two C-level executives.

4. PROPRIETARY PARAMETERS

1. Protected Configuration Elements

The following parameters are classified as trade secrets and subject to enhanced security protocols:

- a) Thermal compensation algorithms
- b) Cold-start initialization sequences
- c) Navigation sensor calibration matrices
- d) Actuator thermal envelope parameters

2. Access Controls

Access to proprietary parameters requires:

- Valid security clearance level Alpha or above
- Signed confidentiality agreement
- Documented business necessity
- Two-factor authentication

5. TESTING AND VALIDATION

1. Required Testing Protocols

a) All configuration changes must undergo:

- Unit testing in simulation environment
- Integration testing in controlled facility
- Full system validation in operational conditions
- Cold-environment stress testing (for thermal parameters)

2. Documentation Requirements

Each test sequence must generate:

- Test plan with success criteria
- Raw performance data
- Variance analysis
- Sign-off by qualified engineer

6. COMPLIANCE AND AUDIT

1. Regular Audits

Configuration management audits shall occur:

- Quarterly for mission-critical parameters
- Semi-annually for standard configurations
- Annually for full system review

2. Regulatory Compliance

All configuration management activities must comply with:

- ISO/IEC 27001:2013
- ANSI/RIA R15.06-2012
- Company's Safety Management System

7. DISASTER RECOVERY

1. Configuration Backup Requirements

a) Full configuration backups required:

- Daily for active development systems
- Weekly for production systems
- Monthly for archived configurations

b) Backup storage must utilize redundant, encrypted repositories

8. LEGAL NOTICES

1. Confidentiality

This document contains proprietary and confidential information of Polar Dynamics Robotics, Inc. Unauthorized disclosure, reproduction, or use is strictly prohibited.

2. Liability Limitation

The Company assumes no liability for unauthorized or improper configuration changes. All modifications must follow procedures herein.

9. DOCUMENT CONTROL

Version: 2.4

Approved By: Dr. James Barrett, Chief Robotics Officer

Date: January 15, 2024

Next Review: July 15, 2024

ACKNOWLEDGMENT

I acknowledge receipt and understanding of this Robot Configuration Management Guide:

Name: _

Title: _

Date: _

Signature: _