REAL-TIME TASK SCHEDULING DOCUMENTATION

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NaviFloor Robotics, Inc.

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1. PURPOSE AND SCOPE

1. This Real-time Task Scheduling Documentation ("Documentation")

2. This Documentation shall govern all real-time task scheduling opera

2. DEFINITIONS

1. "Real-time Task" means any automated operation assigned to an A

2. "Scheduling Engine" refers to the proprietary NaviFloor TaskMaster

3. "Priority Level" designates the hierarchical importance of a task, ran

4. "Execution Window" means the temporal parameters within which a

3. SYSTEM ARCHITECTURE

1. Core Components

a) Central Scheduling Engine

b) Distributed Task Processors

c) Real-time Communication Network

d) Task Queue Management System

e) Priority Resolution Module

2. Integration Points

a) AMR Control Interface

b) Terrain Mapping System

c) Fleet Management Platform

d) Customer Operation Systems

4. SCHEDULING PROTOCOLS

1. Task Classification

1.1. Emergency Override Tasks (P1)

1.2. Time-Critical Operations (P2)

1.3. Standard Production Tasks (P3)

1.4. Background Operations (P4)

2. Resource Allocation

2.1. The Scheduling Engine shall maintain real-time awareness of:

a) Available AMR units

b) Battery levels and charging status

c) Current task loads

d) Environmental conditions

e) System maintenance requirements

3. Conflict Resolution

3.1. Priority-based preemption

3.2. Dynamic resource reallocation

3.3. Queue management protocols

3.4. Deadlock prevention mechanisms

5. PERFORMANCE REQUIREMENTS

1. Temporal Requirements

1.1. Maximum task assignment latency: 50 milliseconds

1.2. Schedule update frequency: 10Hz

1.3. Priority task response time: 100 milliseconds

2. Reliability Metrics

2.1. System uptime requirement: 99.99%

2.2. Task completion success rate: 99.95%

2.3. Scheduling accuracy: 99.99%

6. SAFETY AND COMPLIANCE

1. The Scheduling Engine shall maintain compliance with:

a) ISO/TS 15066:2016 (Robots and robotic devices)

b) ANSI/RIA R15.06-2012

c) Company Safety Protocol Document SP-2023-001

2. Fail-Safe Operations

2.1. Automatic task suspension protocols

2.2. Emergency stop integration

2.3. Safety zone enforcement

7. PROPRIETARY RIGHTS

1. All scheduling algorithms, methodologies, and implementations des

2. This Documentation contains trade secrets and confidential informa

8. MODIFICATION AND MAINTENANCE

1. This Documentation shall be reviewed and updated quarterly by the

2. All modifications must be approved by:

a) Chief Technology Officer

b) Chief Research Officer

c) Head of Product Safety

d) Legal Department

9. DISCLAIMER

1. THE SCHEDULING SYSTEM IS PROVIDED "AS IS" AND THE CO

EXECUTION

IN WITNESS WHEREOF, this Documentation has been executed by representatives of NaviFloor Robotics, Inc.

APPROVED BY:

Marcus Depth

Chief Technology Officer

Date: January 11, 2024

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Chief Research Officer

Date: January 11, 2024