

# NAVIFLOOR SENSOR ARRAY INTEGRATION SPECIFICATIONS

## NAVIFLOOR SENSOR ARRAY INTEGRATION

Document No.: NFSA-2023-001

Version: 3.1

Effective Date: January 15, 2024

Classification: Confidential & Proprietary

### 1. INTRODUCTION

1 This Integration Specification Document ("Specification") sets forth the

2 This Specification is a controlled document subject to the Company's

2. DEFINITIONS

1 "Sensor Array" means the proprietary configuration of pressure-sens

2 "Integration Points" means the designated connection interfaces bet

3 "System Architecture" means the complete hardware and software s

3. TECHNICAL SPECIFICATIONS

1 Sensor Configuration

-

Pressure sensor density: 64 sensors per square meter

- - 2 -

Capacitive sensor overlay: 32 channels per square meter

-

Minimum detection threshold: 0.1 N/cm

-

Maximum load capacity: 2500 kg/m

-

Sampling rate: 1000 Hz

## 2 Data Processing Requirements

-

Local processing unit: NaviCore(TM) v4.0 or later

-

Minimum RAM allocation: 8GB dedicated

-

Storage requirement: 500GB SSD (industrial grade)

-

Network interface: Gigabit Ethernet with redundancy

### 3 Environmental Parameters

-

Operating temperature range: -10 C to 45 C

-

Humidity tolerance: 10% to 90% non-condensing

-

IP67 rated enclosure for processing units

-

EMI/RFI shielding compliant with IEC 61000-4-3

## 4. INTEGRATION PROTOCOLS

## 1 Physical Integration

-

Substrate layer thickness: 4.5mm ± 0.2mm

-

Power requirements: 24V DC, 2.5A maximum draw

-

Grounding requirements: Dedicated earth ground connection

-

Cable specifications: Shielded CAT6A or higher

## 2 Software Integration

-

API version compatibility: NaviFloor(TM) API v3.2.x

-

Protocol support: TCP/IP, MQTT, OPC-UA

- - 5 -

Authentication: OAuth 2.0 with HMAC-SHA256

-

Data encryption: AES-256-GCM

## **5. QUALITY ASSURANCE REQUIREMENTS**

### 1 Testing Requirements

-

Factory acceptance testing (FAT) per ISO/IEC 17025

-

Site acceptance testing (SAT) protocols

-

Calibration verification every 2000 operating hours

-

Performance validation under maximum load conditions

## 2 Certification Requirements

-

CE marking compliance

-

UL certification for North American installations

-

RoHS 3 compliance (EU 2015/863)

-

ISO/IEC 61508 SIL 2 certification

## **6. MAINTENANCE AND SUPPORT**

### 1 Preventive Maintenance

- - 7 -

Quarterly sensor calibration verification

-

Bi-annual firmware updates

-

Annual physical inspection of substrate integrity

-

Monthly diagnostic data analysis

2 Technical Support

-

24/7 remote monitoring capability

-

4-hour response time for critical issues

-



Dedicated technical support contact

-

Regular system health reports

## **7. INTELLECTUAL PROPERTY AND CONFIDENTIALITY**

1 All specifications, designs, and implementation details contained here

2 Recipients of this document agree to maintain its confidentiality and

## **8. DOCUMENT CONTROL**

1 Revision History

-

v3.1: January 15, 2024 - Updated environmental parameters

- - 9 -

v3.0: October 1, 2023 - Major revision of integration protocols

-

v2.1: May 15, 2023 - Updated API specifications

-

v2.0: January 10, 2023 - Initial release

## **9. APPROVAL AND AUTHORIZATION**

APPROVED BY:

Marcus Depth

Chief Technology Officer

NaviFloor Robotics, Inc.

Date: January 15, 2024

Dr. Elena Kovacs

Chief Research Officer

NaviFloor Robotics, Inc.

Date: January 15, 2024

