## TERRAIN CLASSIFICATION NEURAL NETWORK ARCHITECTURE

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#### PROPRIETARY AND CONFIDENTIAL

NaviFloor Robotics, Inc.

Document ID: IP-TCNN-2023-001

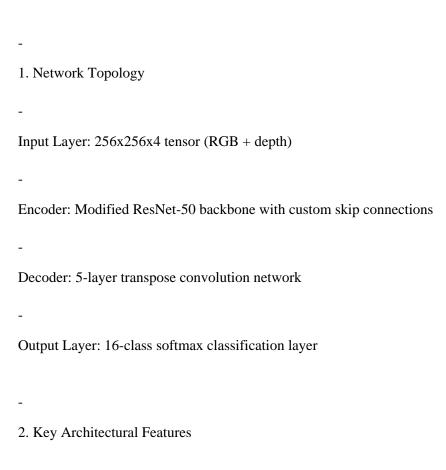
Effective Date: December 15, 2023

#### 1. OVERVIEW AND SCOPE

1. This document describes the proprietary neural network architecture ("Architecture ("Architec

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2. The Architecture comprises the core intellectual property underlying the C
2. DEFINITIONS
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1. "Neural Network" means the specific implementation of deep learning alg
<ul><li>2. "Training Dataset" means the proprietary collection of labeled terrain data</li></ul>
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3. "Model Parameters" means the weights, biases, and hyperparameters that
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4. "Inference Engine" means the optimized software implementation of the A

# 3. TECHNICAL SPECIFICATIONS



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Proprietary attention mechanism for surface texture analysis

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Custom loss function incorporating safety constraints

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Real-time inference optimization for embedded systems

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Hardware-specific acceleration for NVIDIA Jetson platforms

#### 4. INTELLECTUAL PROPERTY PROTECTION

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#### 1. Trade Secret Classification

The Architecture and all associated implementation details are classified as trade secrets under applicable state and federal laws, including the Defend

Trade Secrets Act of 2016.	
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2. Access Controls	
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Access restricted to authorized engineering personnel	
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Multi-factor authentication required for source code repositor	ries
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Segmented access levels for different architectural componer	ıts
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Mandatory logging of all access events	
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3. Third-Party Restrictions	

The Architecture shall not be disclosed to any third party without:

- (a) Written authorization from the Chief Technology Officer
- (b) Execution of an NDA with minimum 5-year term
- (c) Implementation of agreed-upon technical protection measures

#### 5. DEVELOPMENT HISTORY AND OWNERSHIP

1. Original Development

Initial architecture designed by Dr. Marcus Depth and Dr. Elena Kovacs

Development period: June 2018 - March 2019

First deployment in MSANS v1.0 (April 2019)

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2. Subsequent Improvements

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Version 2.0: Enhanced surface texture recognition (October 2020)

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Version 3.0: Multi-modal sensor fusion integration (May 2022)

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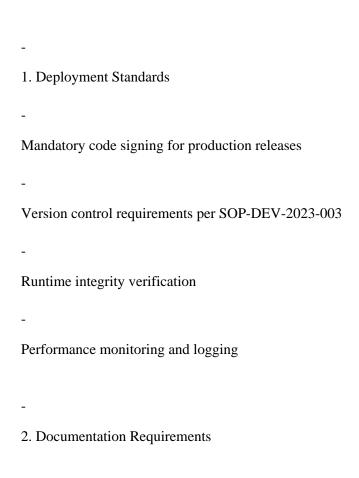
Version 4.0: Real-time adaptation capabilities (Current)

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#### 3. Ownership Declaration

All rights, title, and interest in the Architecture are exclusively owned by NaviFloor Robotics, Inc., including all improvements, modifications, and derivative works.

# 6. USAGE AND IMPLEMENTATION REQUIREMENT



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Architecture changes must be documented in the Technical Design Reposito
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Quarterly security audit compliance
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Maintenance of deployment configuration records
7. CONFIDENTIALITY AND NON-DISCLOSURE
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1. This document contains highly confidential and proprietary information o
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2. Recipients must maintain strict confidentiality and implement appropriate

## 8. CERTIFICATION

The undersigned hereby certifies that this document accurately represents the current state of NaviFloor Robotics' Terrain Classification Neural Network Architecture as of the Effective Date.

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Dr. Marcus Depth

Chief Technology Officer

NaviFloor Robotics, Inc.

Date: December 15, 2023

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Dr. Elena Kovacs

Chief Research Officer

NaviFloor Robotics, Inc.

Date: December 15, 2023

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### 9. DOCUMENT CONTROL

Version: 4.0

Last Updated: December 15, 2023

Review Cycle: Annual

Next Review: December 15, 2024

Document Owner: Office of the CTO

