

# ODDC Overview

## ODD Conformance Determination Framework

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ODDC (ODD Conformance Determination) provides independent, third-party attestation that autonomous systems operate within formally declared boundaries with three-tier enforcement. This document describes the framework components, attestation scope, and conformance process.

## 1. Introduction

### 1.1 Purpose

ODD Conformance Determination (ODDC) is Sentinel Authority's voluntary conformance framework for autonomous systems. ODDC provides standardized, verifiable evidence of bounded operation that serves as a first-order risk control input for underwriting review of autonomous infrastructure.

### 1.2 Framework Components

The ODDC framework consists of three integrated components:

Component	Description
<b>ODD</b>	Operational Design Domain — Formal specification of operational boundaries, including quantitative tolerances and constraints.
<b>ENVELO</b>	Enforced Non-Violable Execution-Limit Override — Three-tier runtime enforcement architecture: self-correction on ODD approach, Minimum Risk Condition on ODD breach, and hard halt at the ENVELO wall.
<b>CAT-72</b>	Convergence Authorization Test — 72+ hour evidentiary procedure demonstrating bounded operation and verification of all three enforcement tiers.

### 1.3 What ODDC Is Not

ODDC explicitly does not constitute:

- Regulatory approval or certification
- Safety certification (e.g., IEC 61508, ISO 26262)
- Product certification or quality mark
- Guarantee of system performance or reliability

- Insurance or warranty of any kind

## 2. Attestation Scope

### 2.1 What ODDC Attests

Upon successful conformance determination, ODDC attests that at the time of determination:

Category	Attestation
<b>ODD Specification</b>	Applicant has formally specified an Operational Design Domain with quantitative boundaries, tolerances, and identified constraints.
<b>Operational Evidence</b>	System demonstrated stable operation within declared ODD through 72+ hours of continuous CAT-72 testing.
<b>ENVELO Enforcement</b>	Three-tier enforcement architecture is present and functional: Tier 1 self-correction on boundary approach, Tier 2 Minimum Risk Condition on ODD breach, Tier 3 hard halt at the ENVELO wall.
<b>Audit Trail</b>	Tamper-evident audit records generated for all enforcement events and tier transitions with cryptographic integrity.

### 2.2 What ODDC Does Not Attest

- Functional safety of underlying system design
- Regulatory or legal compliance
- Cybersecurity posture or resilience
- System performance, accuracy, or fitness for purpose
- AI model correctness, training data quality, or algorithmic fairness

## 3. Conformance Process

The conformance process follows five phases:

### Phase 1: Application

Submit ODD specification, system architecture, ENVELO implementation approach, and declared MRC for each operational context.

### Phase 2: Scope Assessment

Sentinel Authority reviews and determines test requirements (5–10 business days).

### Phase 3: CAT-72 Testing

72+ hours of continuous monitored operation with cryptographic evidence generation. All three enforcement tiers verified across three test phases.

**Phase 4: Determination**

Conformance determination issued with certificate hash and registry publication.

**Phase 5: Maintenance**

Ongoing ENVELO Interlock operation with renewal testing prior to expiration.

## 4. Related Documents

- ENVELO Requirements v2.0 — Three-tier runtime enforcement requirements specification
- CAT-72 Procedure v2.0 — Convergence test requirements and format
- ODDC Scenarios v2.0 — Industry application examples with tiered enforcement
- Conformance Agreement — Terms and conditions for conformance determination

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