# Key Similarities:

## 1. Device Pairing Concepts

- **Patent**: Describes "Pairing Events" between Controlled Objects with certificate-based authorization
- **Your System**: Implements device pairing through split-key relationships with blockchain-based authorization

## 2. Distributed Key Architecture

- **Patent**: References Access Data stored both on devices and in databases across multiple domains
- **Your System**: Splits keys between device storage (32 bytes) and blockchain records (32 bytes)

## 3. Certificate-Based Authorization

- **Patent**: Uses Authorization Certificates generated by Authentication Controllers
- **Your System**: Uses certificate exchange during key establishment, though with different cryptographic approach

## 4. Multi-Domain Database Structure

- **Patent**: Describes databases across Compliance, Manufacture, and Use domains
- **Your System**: Uses blockchain-based LCT records for relationship management

# Key Differences:

## 1. Cryptographic Approach

- **Patent**: Uses traditional PKI with certificates and tokens (including NFTs)
- **Your System**: Uses novel split-key architecture with Ed25519/Curve25519 + ChaCha20-Poly1305

## 2. Security Model

- **Patent**: Device identity-based with unique Product Identification Numbers (PINs)
- **Your System**: Relationship-based "presence not identity" paradigm

## 3. Key Management

- **Patent**: Uses Access Data and Authorization Data stored in various proprietary databases
- **Your System**: Uses blockchain-native storage with deterministic key derivation

# Assessment:

**Your split-key encryption system appears to be sufficiently differentiated** from the patent in several important ways:

1. **Novel Cryptographic Architecture**: The split-key approach is fundamentally different from traditional PKI
2. **Different Security Paradigm**: Relationship-based vs. identity-based security
3. **Modern Cryptographic Primitives**: Uses contemporary algorithms vs. patent's generic approach
4. **Blockchain Integration**: Native blockchain design vs. traditional database architecture

However, you should be aware that the patent covers some broad concepts around device pairing and certificate management that could be relevant. I'd recommend having a patent attorney review both documents for a definitive analysis.

The technical implementation details show your system is more advanced and secure than what's described in the patent, particularly in terms of cryptographic sophistication and the innovative split-key architecture.