Quantum Net OS Public Demo Report

Cosmic Quantum Relay Node — KABOO–TOTAA Stability Framework

This document presents a public demonstration overview of the Quantum Net OS research pathway within the IYABOKO Science & Technology ecosystem. The project explores a Continuity OS simulation framework for quantum-secure relay communication under deep-space environmental stress conditions.

Project Objective

The Cosmic Quantum Relay Node project investigates how a future quantum-assisted relay architecture may maintain secure communication continuity under: solar radiation, gravitational timing drift, photon loss, detector noise, and relay-node instability.

Core Simulation Components

- Quantum Bit Error Rate (QBER) monitoring
- Entanglement fidelity tracking
- Secure key regeneration logic
- KABOO Stability Index modelling
- TOTAA Continuity recovery pathways
- Relay rerouting and synchronization recovery

KABOO Stability Framework

KABOO represents the stability layer of the simulation framework, including timing correction, orbital reference stability, synchronization retention, and environmental shielding logic.

TOTAA Continuity Framework

TOTAA represents continuity-aware recovery logic including parity verification, key rejection, secure-key regeneration, relay rerouting, and synchronization restoration after decoherence events.

Simulation Test Matrix

Simulation Scenario	Main Stressor	Measured Output
Baseline Relay Link	Low-noise environment	Stable QBER and key continuity
Solar Storm Exposure	Radiation burst	QBER rise and fidelity degradation
Gravitational Drift	Timing distortion	Synchronization instability
Relay Failure Event	Node collapse	Key regeneration and rerouting

Prototype Demonstration Metrics

- Continuity Score: 92%
- KABOO Stability Index: 0.88
- TOTAA Recovery Success: 84%
- Simulation Runtime: 1000+ time-step events

Scientific Boundary Statement

This project is a research-stage and simulation-stage framework. It is not presented as proven interstellar infrastructure, aerospace-certified communication hardware, faster-than-light communication, or independently validated quantum-network deployment.

IYABOKO Science & Technology – Software & Hardware
Website: https://iyaboko.com/
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