**The Permanent Bitcoin Ledger (PBL)**

****Call to Action****

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**Proposal: Establishing Space-Based Bitcoin Core Nodes and Infrastructure**

**Historical Background**

The concept of combining space technology with blockchain systems has its roots in the growing need for resilience against global disruptions. Historically, the vulnerability of terrestrial infrastructure to natural disasters, electromagnetic pulses (EMPs), and geopolitical conflicts has driven the push toward decentralized and redundant systems.

Blockchain, introduced through Bitcoin in 2009, has proven to be a revolutionary technology for decentralization and trustless operations. Concurrently, advancements in space exploration, such as reusable rockets and satellite constellations, have opened new frontiers for deploying critical infrastructure beyond Earth.

Pioneering efforts like Blockstream's satellite network have already demonstrated the feasibility of broadcasting Bitcoin's blockchain data from space, enhancing accessibility and decentralization. However, these initiatives remain Earth-reliant. This proposal builds on such milestones by envisioning a robust and independent space-based infrastructure capable of supporting Bitcoin's network during catastrophic events and laying the groundwork for interplanetary commerce.

**Executive Summary**

This proposal advocates for the establishment of space-based Bitcoin Core nodes and supporting infrastructure as a critical step toward ensuring global financial resilience, technological leadership, and decentralization. This initiative would address existential risks, such as electromagnetic pulse (EMP) attacks, geopolitical disruptions, and terrestrial environmental risks, while leveraging synergies with existing space operations. Additionally, it positions each recipient as a pioneer in interplanetary commerce and decentralized systems.

**Objectives**

1. Enhance Financial Resilience: Establishing Bitcoin nodes in space ensures the continuity of the Bitcoin blockchain in the event of Earth-based disruptions (e.g., EMPs, natural disasters).
2. Advance Decentralization: Space-based nodes eliminate dependencies on terrestrial infrastructure, protecting the network from centralized control or state interference.
3. Support Interplanetary Commerce: A Bitcoin backbone in space lays the groundwork for future interplanetary financial systems, aligning with Mars and lunar colonization goals.
4. Leverage Existing Space Technologies: Integrating Bitcoin infrastructure within Starlink, Blue Origin, and NASA projects creates synergies with existing missions, ensuring cost-effective deployment and operation.

**Key Components of the Proposal**

**Deployment of Space-Based Bitcoin Core Nodes**

* Hardware Requirements: Radiation-hardened, low-power computing devices capable of running Bitcoin Core software.
* Energy Source: Solar panels to provide a continuous power supply, eliminating reliance on terrestrial grids.
* Orbit Strategy: Deploy in low Earth orbit (LEO) to minimize latency while maintaining resilience against terrestrial disruptions.
* Communication: Utilize existing satellite constellations (e.g., Starlink, Kuiper) for blockchain synchronization and global access.

**Space-Based Bitcoin Mining**

* Concept: Deploy ASIC mining rigs on satellites powered by solar energy.
* Advantages:
  + Continuous mining enabled by uninterrupted solar energy.
  + Decentralized mining independent of Earth's infrastructure.
* Challenges:
  + Heat dissipation in space.
  + High initial deployment costs.

**Integration with Existing Missions**

* Starlink (SpaceX): Provide Bitcoin blockchain access to remote and underserved areas worldwide, supporting financial inclusion.
* Blue Origin's Orbital Reef: Integrate Bitcoin nodes as part of commercial space station infrastructure to support future interplanetary commerce.
* NASA Missions: Collaborate with NASA's technology development programs to enhance resilience and cybersecurity for blockchain nodes.

**Existential Challenges, Risks, and Justifications**

1. Radiation and Space Environment

Space-based Bitcoin infrastructure must be designed to withstand cosmic radiation, which poses a serious threat to the operation of satellites and data integrity. This ensures the blockchain's resilience during Earth-bound disruptions.

1. Cost of Deployment

While initial costs are high, reusable rockets and modular design significantly reduce barriers over time. This investment ensures Bitcoin's continuity in the face of Earth-based infrastructure failures.

1. Heat Dissipation

Proper thermal management is essential to the long-term functionality of mining hardware. Ensuring efficient cooling systems guarantees sustained Bitcoin operations.

1. Communication Latency

Synchronizing space-based nodes with Earth ensures that the blockchain remains operational and accessible globally. Strategic placement minimizes delays.

1. Geopolitical Risks

Ensuring global collaboration and transparency prevents monopolization of space-based Bitcoin systems, preserving the decentralized ethos of Bitcoin.

**Benefits to Key Participants or Primary Beneficiaries**

Elon Musk (SpaceX)

* Solidifies Starlink's role as a global enabler of decentralized systems.
* Aligns with Mars colonization goals by establishing Bitcoin as the foundation for interplanetary commerce.

Jeff Bezos (Blue Origin)

* Positions Blue Origin as a leader in commercial space-based financial infrastructure.
* Creates synergies with Orbital Reef and other long-term space projects.

Bill Nelson (NASA)

* Enhances NASA's leadership in space technology and public-private collaboration.
* Demonstrates U.S. innovation in decentralized and resilient financial systems.

**Roadmap**

Phase 1: Feasibility Study (Year 1)

* Assess technical, economic, and regulatory requirements.
* Engage stakeholders and form partnerships.

Phase 2: Prototype Development (Years 2–3)

* Design and test satellite-based Bitcoin Core nodes and mining rigs.
* Conduct trial launches with minimal payloads.

Phase 3: Deployment and Scaling (Years 4–5)

* Launch full-scale satellite nodes.
* Expand operations to include mining and interplanetary synchronization.

**Prepared For**

Elon Musk (SpaceX, Starlink) Jeff Bezos (Blue Origin) Bill Nelson (NASA Administrator) Donald J. Trump Eric Trump Donald Trump Jr. Michael Saylor OpenAI European Space Agency (ESA) Indian Space Research Organization (ISRO) United Nations Office for Outer Space Affairs (UNOOSA)

**Leading Bitcoin Research Academic Institutions**

MIT Digital Currency Initiative (Massachusetts Institute of Technology) University of Nicosia (Blockchain and Digital Currency Programs) Stanford Blockchain Research Center Cambridge Centre for Alternative Finance (University of Cambridge) Berkeley Haas Blockchain Initiative (University of California, Berkeley) Cornell Blockchain (Cornell University) Princeton University (Bitcoin and Cryptocurrency Research)

**Why Me?**

I hold degrees in Business Management and Psychology, which have provided me with unique insights into the fallibility of mankind and the systems we rely upon. Witnessing the vulnerabilities inherent in centralized systems, I have come to see the necessity of an autonomous and decentralized ledger, such as Bitcoin since 2012, to safeguard against human error and corruption.

I grew up with rockets in Cocoa Beach and Satellite Beach, Florida, during the early days of NASA's space exploration era. My father was NASA's first ground support engineer, and our home was a retreat for astronauts like Wally Schirra and Deke Slayton. This gave me a front-row seat to the immense technological leaps of the space age.

In 1982, I moved to Seattle to immerse myself in the computing revolution. By December 1983, I was online, actively beta-testing DOS, Windows, and numerous applications. As a charter member of the Pacific Northwest Lotus Users Group, I gained direct exposure to transformative technologies. This lifelong engagement, combined with my understanding of their societal impact, uniquely positions me to advocate for projects bridging space exploration and decentralized financial systems. While I may not hold public prominence, my history reflects a consistent alignment with innovation and progress. Acknowledging my limited technological expertise, I remain steadfast in my commitment to this vision.

**Contact**

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**GitHub Hosting**

The proposal and signing form will be hosted on GitHub Pages, offering free access and a downloadable RTF.

**Supporting Domain and Access**

This proposal will be hosted and accessible for review and signing via permanentbitcoinledger.org.