NODIUS
The Case for Centralized Cubesat Node Servers on the Moon that Operate a
Decentralized Blockchain Ledger Serving as the Backbone for the
Lunar Economy and All Other Celestial Activities

By Lee Holmes

RELEVANCE

Serving as a central architect for **NODIUS [1]**, a centralized network of node servers on the moon running a decentralized blockchain as the backbone for the lunar economy and all other future celestial activities, it is my responsibility to lead a development team to achieve the three initial stages for a terrestrial proof of concept.

NODIUS One (N1) Testnet will prove that a secure moon blockchain can exist on a decentralized networked series of cubesats nodes. The team will create a blockchain software wallet and a cryptocurrency called, **OPAL (xOPL) [2]**, and then send OPALs from wallet to wallet on the N1 Testnet. The movement of these OPALs are archived on the moon blockchain, and this ledger is publicly viewable.

OPALs are also used, or rather burned, in the creation of blockchain smart contracts that can record and/or state anything.

Once NODIUS is implemented as the foundation of the Lunar Economy, OPALs will be issued as dividends to ORB **[3]** Registered citizens of Earth in the form of Universal Income from mining efforts of moon resources.

With the success of the N1 Testnet, the team will shift focus to the N2 Testnet.

The N2 Testnet is a centralized controlled gateway. It serves as the gate keeper for access to the decentralized moon blockchain on Luna, and also as the relay network back to the decentralized moon blockchain on Earth. It keeps the latest and most accurate copy of the blockchain. Any deviations, disruptions or inconsistencies on the moon blockchain that do not match the N2 Testnet will be considered invalid forks.

With proper clearance, access to the moon blockchain on Luna is guaranteed.

But without verified credentials, it is impossible to access the moon blockchain and all of its connected assets on Luna.

Any further attempts to access the moon blockchain without proper clearance would lead to a frequency jamming **[4]** creating technology dead zones for those unauthorized in proximity of the moon and/or its surface.

With N1 and N2 Testnets complete, the team will create the earth bound software based cryptocurrency exchange called, the [[SpaceTradEX (STX)]] **[5].** [[STX]] is connected to the moon blockchain via the N2 Testnet and records all the resources and artifacts that depart from the moon, where those articles are publicly traded for fiat and/or cryptocurrencies, while using OPALs as the foundational cryptocurrency.

HYPOTHESIS

Imagine space company 'XYZ' is registered on the moon blockchain and has been given clearance for commercial activities on the surface of the moon by a small consortium, guided by the instantaneous voting results of Earths populace via an app and smart contract on the moon blockchain.

Company 'XYZ' has financed a moon mining mission for Helium 3, and upon entering Cislunar orbit, company 'XYZ' is scanned by a NODIUS cubesat from a Lagrange point and found to contain the proper clearance. This activity is then recorded in the form of a smart contract on the moon blockchain.

Once company 'XYZ' lands on the surface and proceeds to its proposed mining site, it is once again scanned by a surface and/or orbital NODUIS cubesat and its confirmed that it is in the right location for its commercial activities, and this is also recorded as a smart contract on the moon blockchain.

Company 'XYZ' is successful in collecting its targeted amount of Helium 3, so successful it has decided to remove more than it was contracted for, and when it is scanned by NODIUS before it is given clearance to depart the lunar surface, it is detected to be over its Helium 3 weight limit and is restricted for take off until it comes within its smart contract weight limits.

Company 'XYZ' complies and is scanned again, this time it is cleared and begins its journey back to Earth.

All of this activity has been recorded on the moon blockchain and it is readily available to all Earth citizens.

Once back on Earth, the Helium 3 enters the resources exchange and sold at market value. Portions of all extraterrestrial resources or artifacts of value are calculated at current exchange rates and dividends are sent out in the form of a OPALs to all who have registered as a citizen of Earth though the Worldcoin ORB verification system.

Company 'XYZ' made an incredible fortune for its lunar endeavors, by providing the earth with an amazing amount of energy in the raw form of Helium 3, but has also participated in the world tax used as Universal Income for Earth citizens.

For a self-sustaining Lunar Economy in the next 10 years, NODIUS provides the backbone. NODUIS does not reinvent the wheel or depend on deep pocket financing, as it is a financial instrument at its core that offers so much more. NODUIS is a true storage of value, it is a storage of our human endeavors, and the archive of our time.

BIOGRAPHY

LEE HOLMES
Citizenship Status: U.S. Citizen
General Schedule Score: GS-5
Veteran Status & Preference: No

ASSOCIATIONS
Pacific Lodge A.F. & A.M., Amherst, MA
American Sailing Association, LA, CA
Mojave Air & Space Port, Mojave, CA
Children's Hospital, Los Angeles, CA
Sigma Alpha Epsilon, Tennessee Beta
Navy Boys Soccer Camp, Annapolis, MD

DESIGN ARCHITECT
Design Philosophy: Simple, Intuitive, Beautiful. Passion for interfaces, blockchains & the moon. Fascinated how internet connected systems effect human behavior and life experiences.

Pragmatic visionary with relentless desire for innovation. Leader in system design. Excellent analytical, visualization and presentation skills with ability to communicate complex concepts across different audiences.

In the late 1990's and early 2000's, created and developed at the Mojave Air & Space Port, the Lunar Land Management Society (L2MS), the first land stewardship program for the conservation of the Moon's natural resources. As technology advanced, that program morphed into NODIUS, a modern blockchain solution for a decentralized moon land management program.

I have been an avid crypto enthusiasts and developer since 2011, and have worked in various platforms and ecosystems including mixed reality, and artificial intelligence.

Currently, I lead the UX UI design team for interfaces and experiences for an outdoor guide platform in Boston Massachusetts.

REFERENCES

[1] Nodius | noun | no·di·us | nō-dē-əs | a rightful & lawful network of nodes.
[2] OPAL (xOPL), Primary cryptocurrency used on the moon and within the lunar economy.
[3] ORB, 'The Orb is an imaging device that scans a persons eyeball and verifies they are a real and unique person who then receives a World ID', https://worldcoin.org, 2023
[4] Startups like Rhea Space Activity (RSA) could provide antennas that create technology dead zones, https://www.rheaspaceactivity.com, 2023
[5] For the purposes of this public document, the Space Trade Exchange is the proprietary property of the author of this RFI.