

# Neos White Paper: The First Metaverse Built From Within

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March 2020

Version 1.03

## Abstract

Neos is a **virtual reality metaverse** that reinvents and generalizes the way social experiences and various virtual creations are built, to let them all coexist in one shared space. The innovative underlying architecture, based on simple, yet powerful building blocks in an expandable future-proof way, is designed to dynamically synchronize complex worlds and behaviors built directly from within Neos. With a rapidly growing community, the potential for a rich **Neos in-verse economy** emerges as a way for content creators and service providers to make a living in Neos, and help it to grow into a vibrant, desirable place: a spatial computing platform of choice.

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## Neos In-verse Economy

In any space where people interact and coexist, physical or metaverse, the need for economy emerges. It's an opportunity to specialize, exchange various goods and services, form businesses and make a living. The market of a metaverse focuses primarily on needs higher up in Maslow's pyramid of needs (psychological), like self-fulfillment through social interactions, relationships, entertainment, and self-actualization through creative activities, art, education, and science.

**Neos Credits cryptocurrency token** allows for both an independent in-verse economy and value transfer to and from other cryptocurrency markets interconnected with the base world economy, practical for the fulfillment of basic (physiological and physical) needs.

## Neos Credits - NCR

### *Basic Info*

Total supply:	50,000,000 NCR
Total mint:	48,000,000 NCR
Community Fund:	2,000,000 NCR
Decimal places:	18
Blockchain:	ERC20 Ethereum
Initial minting price:	0.06 USD
Initial minting cap:	3 million USD
Minting batches:	400
Minting batch size:	100,000 NCR
Value per batch:	+1.25%
Final minting price:	≈ 8.53 USD*
Final minting cap:	≈ 340 million USD*
Final minting yield:	≈ 68 million USD*

*\*hypothetical if/when minting reaches Total mint*

Logo:

Character sign:  *Double-Struck Capital N (Unicode +2115)*

Subunits:               - 1 Neos Credit (NCR, also known as a Federation Credit)  
                              = 1,000 Neos Units (Yondu Udonta likes to place bounties with these)  
                              = 1,000,000,000,000,000,000 noi (base unit, nobody likes these)

Contract:               This is Neos Credits genesis contract address, see [website](#) for mint address.  
                              0xdb5c3c46e28b53a39c255aa39a411dd64e5fed9c  
                              **DO NOT SEND ETH OR NCR TO THIS ADDRESS**

## Minting Process

The minting process is designed to initially **distribute Neos Credits** (NCR) to supporters and early adopters so that they can take part in the in-verse economy and benefit from the eventual economic success of Neos. **Rewarding those who help** to develop advanced iterations of the Neos metaverse is our top priority. Neos Credits can be obtained:

1. **Directly by sending Ethereum** to the minting address listed on our website <https://neosvr.com/>. The value of NCR obtained directly corresponds to the minting process batch pricing minus a network transaction fee. Transactions are processed in order of their blockchain confirmation times within 48 hours. A transaction is considered confirmed after reaching seven block confirmations.

Make sure to use a wallet that directly manages your private keys, like the default [Ethereum Wallet \(Mist\)](#) or [Metamask](#), to be able to receive, store, send, and trade NCR. Please don't send buy transactions directly from an exchange or similar managed wallet, as potentially you will be unable to prove your NCR ownership.

2. As one of the **rewards for our Patreon supporters** at <https://www.patreon.com/neosvr>. The value of NCR obtained this way corresponds to minting value only indirectly and should normally be about 50-70% of the corresponding pledge. NCR Patreon rewards will be adjusted accordingly as regular NCR mint value increases.

Patreon supporters receive Neos Credits as an incoming transaction towards their in-verse Neos account managed wallet. Each month a Patreon reward aggregate transaction representing all Patreon rewards is made to an internal Neos address. Patrons can individually request blockchain withdrawals in their Neos account managed wallets.

Ethereum minting yield will be used exclusively to **fund development of Neos metaverse** through expansion of Neos team, developer, and content creator grants and awards, as well as other activities directly improving the value and enjoyment of time spent in Neos.

Such an investment should, over time, further increase the user base, time spent, volume of metaverse economy overall, demand for Neos Credits, and their value.

## Trading and Marketplaces

The prerequisite for trading is knowing what belongs to whom and on what terms. As of writing this white paper, The Neos **License Information Component** (LIC, [GitHub link](#)) is in the late stage of development, and is soon to be pushed to the metaverse. The LIC tracks licensing and ownership deals in a smart way, which includes contracts, group ownership, versioning, and sub-component tracking.

The launch of the LIC will be accompanied by a graphical user interface allowing users to comfortably realize both one time and automated **trustless NCR trades** on pre-agreed terms, and to manage licenses and ownership deals where applicable, efficiently introducing a unified in-verse trading platform.

To further facilitate an in-verse economy, **Neos Store** and **Neos Jobs** ([GitHub link](#)) marketplaces will be introduced to efficiently connect customers with product and provider listings. Listings include the interactive object, world or other asset offered, or a representative part of it, and/or an in-verse example of a custom service process or possible results when applicable, previous customer satisfaction scores, reviews and other relevant information. Optional escrow customer protection service will be implemented as well.

## Community Developer Fund

The Neos Community Developer Fund is designed to **reward the extraordinary efforts and contributions** of individuals and groups that help push Neos towards its grand vision through development, content creation, outreach efforts, event organizing, and other activities.

Every **25th** minting batch (4% of all NCR, \$ 11,039,364 USD at the time of mint) is reserved for **Community Developer Fund Token (CDFT)** holders, and is converted to NCR at the time of the previous batch's completion.

CDFTs are **non-transferable** tokens associated to a Neos Account, or Neos Group.

CDFTs are distributed following an [individual application](#) review. Unallocated CDFTs are stored for later allocation. All NCR mint from previous CDF batches is minted at the time of allocation when applicable.

## Neos Decentralized

Neos is **decentralized peer-to-peer software** by design. Any user can act as a host to as many peers as her or his broadband and computational capabilities allow. Neos works well on local/isolated networks. That said, a lot of the optional services that make Neos more comfortable to use are centralized as of writing this white paper.

We have implemented an active session lookup service, relay server service for when direct and NAT punch-through connection fails, cloud services, and content publishing services in a scalable centralized fashion for now, in order to make Neos **practical and user friendly** as soon as possible.

The Neos developer team will work to seamlessly transition all these and all future services to their respective decentralized—but also harder to implement and test—alternatives.

With proper funding and development time scales, we'll be taking progressively greater advantage of both traditional decentralized tech like global consensus **blockchain** (Ethereum), **distributed hash tables** (distributed trackers), **p2p sharing** protocols (BitTorrent), and upcoming decentralized tech when reaching their desired readiness stages, such as local consensus **autonomous data networks** (SAFE Network) and various **distributed computing** platforms (Golem Network).

## Underlying Architecture

We spent a significant amount of time engineering and implementing Neos' engine and networking architecture from the ground up to enable its **complex functionality** and **high flexibility**, offering an unparalleled level of creative control in a fully synchronized VR setting.

Our goal was to blend the networking with the engine architecture itself, creating a general **abstraction layer** that solves common problems and provides them as various programming and engine primitives, with well-defined behaviors and interactions, as well as implicit support for network replication and persistence.

The core of Neos is formed by **building blocks** that are equivalents of basic programming data structures, such as variables, references, arrays, lists, dictionaries, trees, or classes. The core engine functionality is built from these building blocks, as

well as all other higher level behaviors, subsystems, tools, and interfaces, making none of them “special”.

This allows for quickly designing and implementing new subsystems, components, tools, or entity behaviors **without need for any network programming** (and dealing with bugs introduced by it), and offers automatic interoperability between each part of the system, such as access to all properties from the scene inspector, or connecting them via the visual scripting language (which itself is built using the same building blocks).

Thanks to the very general and low level nature of the building blocks, the engine is mostly free from higher level idiosyncrasies that other creative platforms have, giving users the **maximum** amount of **control**, thus allowing a much richer variety of creations within a single universe, ranging from entertainment, and education, to professional visualization, engineering, and science.

## **Community-Driven Development**

After years of tireless development, we now experience a new paradigm with an early beta version of the Neos metaverse being already populated by our awesome visionary community, to which we owe huge thanks.

Not only does it make getting up in the morning much more exciting and purposeful, it also provides us with huge amounts of data and feedback, enabling us to make effective, informed, and data-driven development decisions, and to efficiently prioritize an extensive amount of planned features ([GitHub link](#)) according to our **community needs**. Not all subsystems and features are immediately useful and easy to communicate. We strive to hit a balanced mix of practical iterative and immediate improvements, as well as ambitious longer-term development projects.

But most importantly we pledge to always put our community needs and opinions first.

## **Team Expansion Pitch (video)**

With mature and stabilized underlying architecture in place, we are now ready to effectively expand the Neos developer team by creating partially independent developer groups working on planned features in parallel. Help us get there by supporting Neos on Patreon or by participating in the Neos Credits token sale.

*Neas VR Team Expansion Pitch - <https://youtu.be/OMgErI6oTFA>*

## **Neos Master Plan**

Our mission is to accelerate the **transition to spatial computing interfaces** and usage of advanced meta spaces as they gradually take over from contemporary two-dimensional computing interfaces, in the same way that they once took over from command-line text based interfaces. The main driver of this transition is the need to collaborate more efficiently, the need for interfaces to be generally more similar to our natural environment and interactions, as well as intuitive for new users, and the strengthening worldwide frustration of being connected like never before, yet feeling alone as individuals.

Spatial computing users can **naturally interact** with each other, things, devices, environments, and whole worlds. It delivers interactions analogous of real world ones, while not being restricted by the laws of physics. It is complemented by an optional smart layer which automates repetitive tasks, processing, handling of files, as well as taking advantage of various applications and services. Generally it progressively more intelligently achieves desired user action without bothering the user, freeing her or his time to focus on higher level tasks.

One of the grand goals is to shorten—and finally remove—the gap between imagination and implementation, making it easier to take an idea and share it with others in an effective form, essentially **materializing the idea** into something virtually tangible. Such advancement will greatly improve communication and collaboration between all kinds of people.

It should be mentioned here that the stereotype of exciting meta spaces and contrasting dystopian base reality makes for thrilling books and movies (insert Ready Player One pun), but is rooted in reality about as much the stereotypical electric car which must be slow and boring. The opportunities that spatial computing interfaces and meta spaces bring are synergetic to activities like education, science, design, development, empathy training, remote assistance, remote machinery operation, and many others, and they should contribute to a more **desirable reality** for everyone.

It's safe to assume that regular users of future advanced meta spaces will generally place less emphasis on materialistic possessions and values, as those are **abundant** in such spaces, and place greater emphasis on scarce values like social relationships, novel experiences, art, intellectual property, and related activities in general.

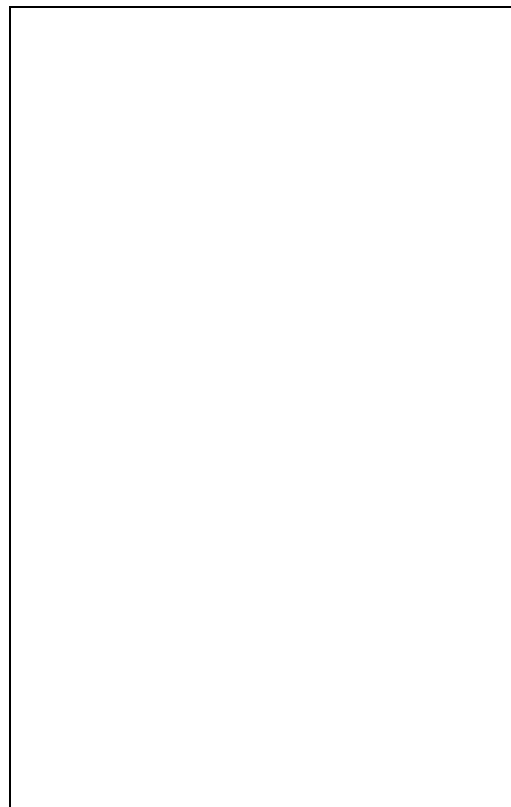
Experience with advanced spatial computing tools augments job market value, entrepreneurial options, purchase power, and time effectiveness. This could—in conjunction with the absence of a need to physically travel for work and shifted values—usher in a new class of citizens with a smaller ecological footprint and **superior capability to do good** for themselves and their communities.

A portion of the population in developing countries, also known as the **rising billion**, could choose to skip contemporary materialistic lifestyles altogether, the way they skipped landlines directly to cell phones.

## Origins and Founders

Solirax Ltd was co-founded by **Tomas “Frooxius” Mariancik** and **Karel “Karel” Hulec**, two VR veterans and original Oculus Rift Kickstarter backers.

**Tomas** started developing games when he got his first computer at the age of twelve and has been tinkering with technology ever since, always searching for novel approaches to solving problems. During his high school years he received the 4th Grand Award in Computer Science at Intel ISEF 2012 for his **experimental processor architectures**. After returning to game design he started his VR career by supporting the Oculus Rift Kickstarter and developing some of the early award-winning VR





experiences, such as **SightLine** - 3rd place in the 2013 Oculus VR Jam, **SightLine: The Chair** - Grand Award at the Kaleidoscope VR Film Festival, **World of Comenius** - 3rd place in the 2014 Leap Motion 3D Jam, and **Neos: The Universe** - 3rd place in the 2015 Oculus & Samsung VR Jam

**Karel** is a futurist, generalist and enthusiastic tech analytic to the bone, who has always had a knack for combining business and technology. He joined the **cryptocurrency community** and cryptocurrency mining operations early on, reinvesting earnings to fund other innovative decentralized projects and his VR endeavors. Starting with the development and manufacturing of **virtual reality hardware**, and joining forces with Tomas on advanced **virtual reality software** development later on.

Because Karel and Tomas shared the same passion for using VR beyond gaming and entertainment to improve education, work, and science, they founded Solirax Ltd, which was, at that point, one of the very first startups to get investment in the VR space as part of the first **River VR accelerator** by the Rothenberg Ventures in early 2015. Thanks to the funding and awesome Rothenberg Ventures team mentors and expertise, we have been able to focus on **developing Neos for the past four years**, building a novel **metaverse engine from the ground up**, rethinking basic approaches to developing social immersive tools and experiences.

## **Legal Disclaimer**

The information set forth above and below should not be considered exhaustive and does not imply any elements of a contractual relationship. Its sole purpose is to provide relevant and reasonable information to potential token holders in order for them to determine whether to undertake a thorough analysis of the company with the intent of acquiring Neos Credits (NCR) cryptocurrency tokens.

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