



Spektrum

INITIAL PRESENTATION

PROJECT SPEKTRUM

Democratic
5G Wireless
Network

Advanced
Smart Contract
Platform

Radio Spectrum
Asset Pool

Metaverse
Identity Gateway
(IDaaS)



LET'S DISRUPT TELECOM!

Project Spektrum aims to change current ownership models and help break localized monopolies within the telecom industry, paving the way towards free internet access and frictionless on-demand 5G services across the globe.

Our goal is to democratize, decentralize, and lower the cost of wireless network access by creating a new type of global telecom layer, in which consumers can also be service providers and stakeholders, all at the same time.

The Spektrum network will be fuelled by the SPK coin, which enables consumers to access the internet for very low pay-as-you-go rates and can generate consistent rewards for users that choose to share their internet connection with others by running Spektrum Portal devices.

The SPK coin and the underlying blockchain will also empower a brand new decentralized value ecosystem and data

access marketplace which in turn will incentivise the creation of local 5G wireless networks owned and operated by the community.

We want consumers all over the world to be able to pay lower and more homogenous tariffs for wireless access, based on fair pricing principles, without having to stand for unjustified heavy premiums made possible in some places by lack of competition and unfair advantages.

The plan begins in Canada and gradually expands to the rest of the world, as a modular, hyper-efficient global 5G network.

REVOLUTIONIZE TELECOM. IS THAT REALLY NECESSARY?

Telecom services are becoming increasingly crucial to society in today's context. However, despite providing indispensable services during the pandemic, telecom companies last year couldn't reverse one of the industry's persistent challenges: They created less value for shareholders than nearly every other sector during the pandemic.

Under the current model, telecom companies' core assets are enabling a host of new businesses in the digital economy, but the financial rewards appear to be accruing to others. And this trend is accelerating fast, due to the rise of OTT platforms dominance.

Meanwhile, the virtualization of network connectivity and other long-term industry trends are accelerating, reshaping the basis for competition. All of this is creating more urgency than ever before for a pivotal move in this sector, in order to adapt and even transform businesses.

WHAT DO THE CONSUMERS HAVE TO SAY?

According to Forbes, cable providers, internet service providers and wireless service providers top the list of most hated industries by customers, mainly due to clueless customer service and inflexible billing, which generate feelings of being trapped and helplessness.

The Emphatic 2020's

Gaining the support and approval of the user base will be among the key drivers of success in the years to come, as Gen Z expects brands to GENUINELY stand for what they believe in.

Not much hope for a sense of community and friendship there, right?

This seems highly wasteful and frankly ridiculous to us. The providers of global interconnectedness should be supported and revered by the community, not vilified due to ageing value models that no longer fit the rapidly evolving status quo.

65%*

Customer Satisfaction

*according to ACSI US
Telecom Study 2020-2021

WE PROPOSE A SEISMIC SHIFT IN CURRENT BUSINESS MODELS

In our opinion, a bold transformation is necessary in order to face the unprecedented challenges in responding to the continuing health crisis while simultaneously staying ahead of a rapid industry transformation that began well before the pandemic.

New tools, fresh people and new horizons are required in order to unlock further value creation opportunities and regain rightful control of information flows, in a distributed, democratic way this time around.

A focal point of the Spektrum Project is reconciling telecom with the extremely large user base, in order to achieve a sense of community, which in turn begins compounding support and adoption at an unprecedented rate.

As a recent example of successful reconciliation, we feel compelled to reference the social media sector and the roaring ascension of Bytedances' TikTok. Whoever does it right, gets to lead the pack.

CANADA, THE PERFECT PLACE TO START

Project Spektrum sets off in Canada, as an answer to the decades- long high cell phone prices situation in the country and the discretionary behaviour of the 3 incumbent telcom companies dividing the Canadian map into localized monopolies.

A landmark survey conducted in 2019 revealed unprecedented level of consumer frustration with the industry. Lack of fairness, affordability and choice seen as creating an anti-consumer telecom environment.

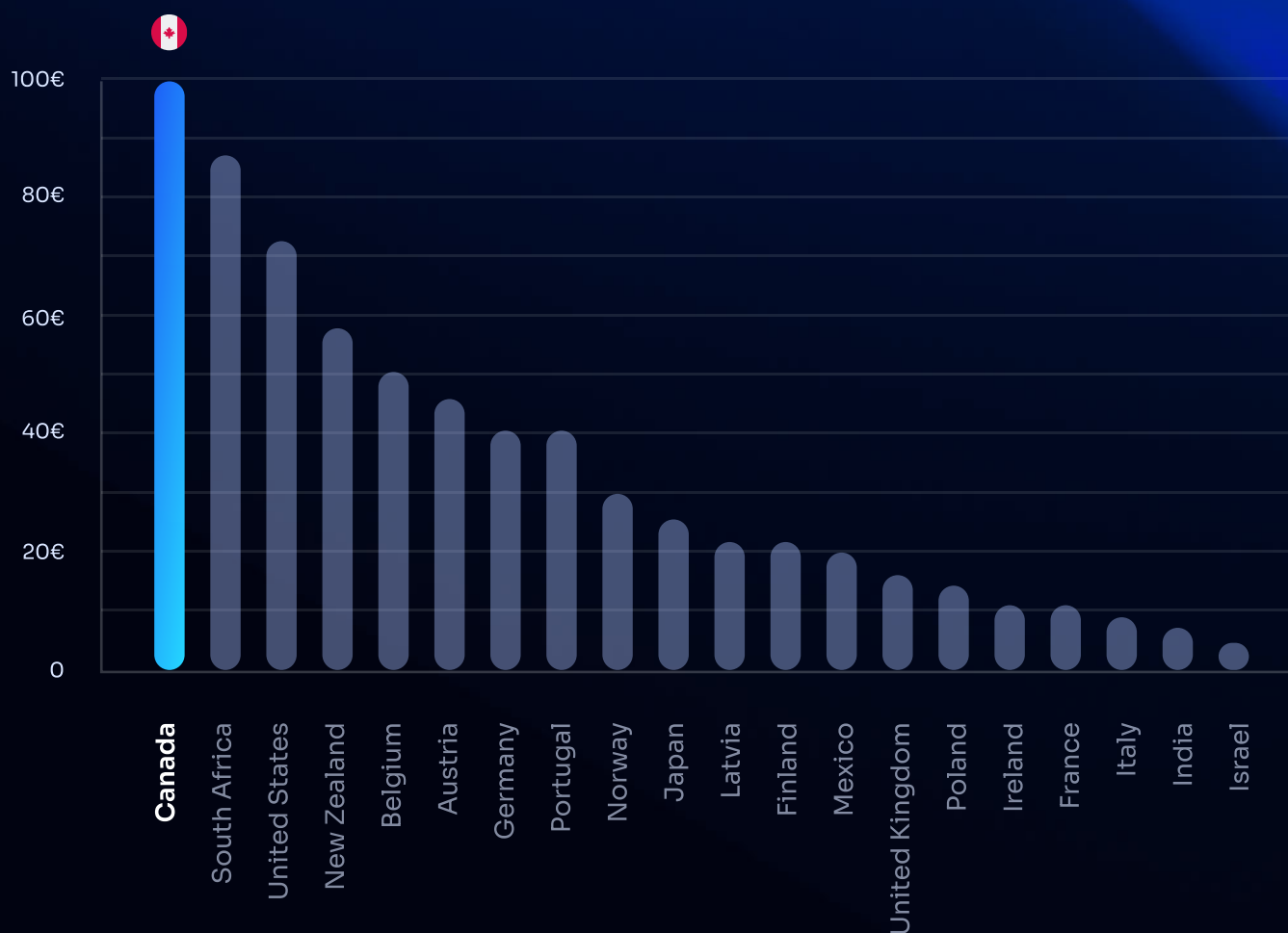
The Canadian Regulator, the CRTC, also found that Canada's telecom industry uses unacceptable sales practices that mislead consumers and harm vulnerable members of the public on a regular basis.

For years, Canadian consumers have been complaining about high cellular bills, which rank among the steepest in the world. The Prime Minister even threatened to take action earlier this year if the Big Three (Rogers, Bell, Telus) failed to cut bills by 25%. As expected, this did not happen, without any repercussion for the 3 incumbents.

THE STATE OF 4G AND 5G PRICING, 2ND HALF OF 2021, COUNTRY RANKINGS

MIN monthly price for 100 gigabytes - 2H2021

4G&5G smartphone plans with at least 1000 mins and 10 Mbit/s peak speed



NETWORK SHARING TO THE RESCUE



DECENTRALIZED NETWORK ASSET OWNERSHIP

Members of the community can own and operate small cell relay stations on their property, earning passive income in the process and making them an integral part of the network.




LOWER COSTS FOR EMPOWERED CONSUMERS

Users will access the network free of charge through blockchain staking mechanisms, pay considerably less for premium service, and only pay for what is actually used, without any other obligation.



RELIABLE AND EFFICIENT 5G ON THE BLOCKCHAIN

We took the liberty to design a state-of-the-art, energy-efficient smart chain, able to accommodate the densely populated, data rich future ahead of us, which also provides the juice powering the Spektrum ecosystem: The SPK crypto token.



No costly plans or long subscriptions here! I just pay for what I use and move on with my life.

K1 PORTAL

Spektrum K1 Portal devices are estimated to yield their owners a base reward of \$300/week + throughput & QoS bonuses, with a forecasted 100% ROI range of 6 to 18 months, depending on usage patterns.



SPEKTRUM PORTALS

WIRELESS GATEWAYS

Spektrum Portals are 5G, LTE and WiFi capable devices, varying widely in power output and size, in order to best fit a wide array of deployment scenarios. Portal devices will be plug and play after initial deployment and will start generating SPK rewards for their owners as soon as they are connected to the network. Portals are made up of 2 components:

THE RADIO CELL (OUTDOOR/INDOOR)

The Radio Cell (Outdoor/Indoor)
Ranging in power output from 0.25W for indoor use to 60W and beyond for wide area coverage.

Cells will be fixed and geo-locked once installed through built-in GPS. Each specific radio cell deployment will be dependent on RF exposure compliance, EM field compliance, RF propagation studies and will be performed by a Spektrum internal or accredited partner tech team.

THE GATEWAY (INDOOR)

Will connect the radio cell to the network core directly, through the deployer's internet connection via UTP cable.

The first gateway version will be a data-only Magma AGW iteration.

SPK Gateways are radio-agnostic, allowing for easy Portal upgrades and even custom and DIY radio solutions to be implemented by owners later on.

DECENTRALIZED 5G NETWORK OF GLOBAL PROPORTIONS

We envisioned Spektrum as the natural evolution of current telecom networks, a decentralized and democratic living ecosystem underpinned by its own smart blockchain.

At first, Spektrum will only be available as a wireless network in Canada, but once interest in decentralized telecom is confirmed in other permitting jurisdictions, Spektrum will offer local users the opportunity to own and run their own telecom infrastructure, deployed on top of the existing internet connection layer, through network sharing.

The underlying intention is simple: Our vision for the future of wireless networks revolves around the concept of network sharing. The idea is for people to share their internet connection with others and create their own collaborative wireless network.

There are no limits to how large the Spektrum Network can grow. We built the underlying technology to sustain one vast 5G network spanning whole continents, creating seamless experiences across borders and cultures.

SPEKTRUM CHAIN

BLOCKCHAIN AS TELECOM INFRASTRUCTURE

Spektrum Chain is designed to sustain a globally ubiquitous, decentralised 5G & beyond network, entirely owned and governed by its community.

I

Assures a simple, unified, cohesive and unbreachable way of authenticating across all aspects of the network: unique ids through public-private key combinations for all participants on the network, secure login functionality and device authentication through on-chain message signing.

III

Serves as an immutable, impartial and readily auditable lightweight asset notary service through timestamped data bundle hashes for resources, transactions, data packets, service quality, bandwidth consumed etc.

II

Accommodates the whole range of business logic being used in traditional wireless networks and more through limitlessly flexible self-executing smart contracts. Furthermore, the trustless way in which contracts run once deployed and verified further eases internal processes.

IV

Provides a transactional infrastructure for the wireless relay stations and network users to transact with one another, get compensated for services and compete in a free market economy that adheres to clear guidelines.

BLOCKCHAIN USERS, PORTALS AND VALIDATORS

01

Users

[Wireless Subscribers]

Users are attributed unique wallet addresses, can use the blockchain to transfer value, interact with and deploy smart contracts, participate in native token staking and authenticate securely within sim card/e-sim for wireless network access and identity-as-a-service.

03

Validators

[Blockchain Transaction Processors]

Validators perform the computational heavy lifting and ensure the Spektrum blockchain is running in a decentralized, immutable manner, as intended. Validators have to reach consensus for posted blocks. All Validators must stake SPK and receive SPK rewards for successful block validation, in order to ensure commitment to correct and timely behaviour.

02

Spektrum Portals

[Wireless Access Providers]

Gatekeepers deploy physical 5G wireless access points and share their available internet connection with the users. They receive SPK token incentives for providing wireless coverage and bandwidth to users. Nodes do not need to stake SPK tokens, as the wireless access economic model is secured through the user staking mechanism.



NETWORK USERS ECONOMIC MODEL

Upon signup, wireless service users are provided with a sim card or e-sim, which allows enrollment on the network. Whenever in range of Spektrum Portal wireless access points, subscribers will have seamless internet access through network sharing and will be able to consume data by direct card purchase, by spending a few SPK tokens or by simply locking up SPK tokens in a blockchain wallet, in a process called staking.



Spektrum Wireless Data Rates

We estimate initial Spektrum wireless data rates in Canada will range between \$0.3 - \$1 / Gb, which is already well below the national average. Data prices will greatly improve as local Spektrum small-cell networks get denser, larger and start merging with one another and as Spektrum expands to more jurisdictions.



Native SPK Coin Staking

The underlying protocol for the Spektrum blockchain will exist as a inflationary model which will ensure sufficient coins will be generated in order to motivate network expansion, blockchain decentralization and community growth. Users will be able to stake their coins on native protocol smart contracts with 1st Epoch estimated APY range of 20%-30% , in order to safeguard long-term holders against inflation.

SPEKTRUM PORTAL ECONOMIC MODEL



Spektrum Portals will yield their owners (Gatekeepers) a standard weekly base reward + a premium for every Gb of data served to users. The base reward is entirely subsidised by the network and will slowly diminish over a period of 20 years.



Return on Investment

The initial break-even point (100% ROI) for Spektrum Portal devices will be between 12 and 18 months, taking into account base reward alone. High traffic Portals will achieve break-even much faster than that.



Spektrum Portal Coordinator Program

Users that would like to get involved can become Spektrum Portal Coordinators, which will earn them a recurring share from Portal revenue:

- 20% share of revenue for the first 2 years
- 5% share of revenue from the 3rd year on



Portal Device Acquisiting & Deployment Financing

Aside from upfront payment, two financing scenarios will be available for acquiring Spektrum Portals:

Financing by Coordinator

The Coordinator of one or more Spektrum Gateway deals can, aside from facilitating the Portal installation, also secure funding or financing, in order to help the Gatekeeper deploy and broadcast as quick as possible.

Collateralized crypto loans

Gatekeepers will be able to borrow against a basket of USD-pegged “stablecoins” in order to fully finance the acquisition and installation of one or more Spektrum Gateways.

Up to 80% of Spektrum Portal revenue can go toward repaying a loan.



RADIO SPECTRUM PROVIDER ECONOMIC MODEL

In order to be able to broadcast across the airwaves, Spektrum needs to own or rent radio spectrum in the corresponding area.

Spektrum Networks will attempt to own radio spectrum assets whenever possible. However, because this is a highly regulated, sensitive resource, we will also actively seek to reach revenue-share deals with strategic spectrum asset owners across the world.



Network Availability Rewards Revenue Share

Spektrum Portals receive part of network usage fees, as well as a base reward for keeping Portals operational. In locations where Spektrum Networks does not own radio spectrum and has a spectrum lease deal, the radio spectrum provider will get:

- 10% of Spektrum Portal base reward.



Network Usage Fees Revenue Share

User network access generates revenue, which will get divided as follows:

- 40% the Spektrum Portal that is serving the data
- 30% the radio spectrum provider
- 20% Spektrum Networks



VALIDATOR ECONOMIC MODEL

Validators need to stake **1,000,000.00 (1 million) SPK** (initially worth \$20,000). All validators will receive up to **12% statistical APY** on their stacked coins. Epoch I validator incentives are able to accommodate up to 1300 validators with this maximum APY rate.

Validation revenue is received for every successfully validated block and is ineligible for compounding of revenue, accrued rewards going directly to the owner's private wallet. Validators may also receive "tips" from transaction senders as an incentive to include transactions in their produced blocks. Validators will receive 100% of these tips directly.

Slashing of stacked coins will, of course, occur for misbehaving or sleeping on the job.

Participants are still eligible for validating blocks while they have 500,000 SPK or more actively staked. Validators who fall below this threshold due to repeated slashing will be taken out of the validator pool and will need to top up to the full 1,000,000 SPK to continue validating. In case there will be a waiting line for new validators, the subject will benefit from a 3-day grace period for resuming the role immediately.

SPEKTRUM

TOKEN ECONOMY

5 Inflationary Epochs, each epoch 4 years long.

6,000,000,000.00 SPK coins will be minted initially, followed by 5 subsequent coin emission cycles. A maximum of 21,000,000,000.00 SPK coins will ever be created, over a period of 20 years, divided in 4-year-long epochs.

Foundation Event 2022



1st Epoch 2022 - 2026



2nd Epoch 2026 - 2030



3rd Epoch 2030 - 2034



4th Epoch 2034 - 2038



5th Epoch 2038 - 2042



6th Epoch 2042 & onward

Red

No more tokens will be created

The network will be able to exist purely on its own, without inflationary incentives.



SPEKTRUM EPOCHS

INFLATIONARY MODEL

Each epoch will have a different fixed number of coins that will be minted constantly and linearly on a daily basis during the 4 year duration. Not all epochs will follow the same reward patterns, as their purpose is to keep the project easy to adapt and expand as time goes on. The Spektrum underlying protocol and the whole network will become increasingly democratized and decentralized as a result and one can regard the 5 epochs as major milestones and upgrade points in the life of the Spektrum Network.

SPEKTRUM EPOCH INCENTIVES DISTRIBUTION MODEL



EPOCH 1 (BLUE)

For epoch I, a total of 5,000,000,000.00 SPK (5 billion) coins will be minted, at an approximate rate of 3,400,000.00 SPK (3.4 million) per day, which will be distributed among 4 distinct incentive pools embodied by smart contracts, as follows:



Portal Devices Subsidy Pool 40%

This will ensure the portal devices base revenue rate, necessary in order to secure network access point profitability while the decentralized network userbase is being built.



Stacking Yield Pool 30%

Offering attractive coin stacking opportunities natively is a key industry-wide protocol adoption driver which also doubles as main liquidity provision mechanism for the on-chain decentralised finance ecosystem



Community Engagement Pool 20%

Bounty programs, hackathons, bug bounties and airdrops are all integral parts of a healthy token economy.



Validator Rewards Pool 10%

Validators form the backbone of the Spektrum blockchain by processing transactions and participating in consensus. There will always be a way in which Spektrum will reward validators for processing transactions.

It is not absolutely necessary that all incentive pool tokens be spent and at the end of every epoch, all remaining unspent incentive tokens will be burned in deflationary events.

II - V**EPOCHS 2 – 5**

Starting with epoch II, the minted SPK coins will be allocated among designated incentive pools, in accordance with specific protocol needs.

Also from epoch II onward, the community will start being consulted in protocol decisions such as incentivisation pools and their respective token allocation.

We see epoch I as the perfect timeframe to build solid adoption and coin distribution, as to start activating on-chain governance protocols beginning with epoch II.

VI**EPOCH 6 (RED)**

By the time epoch VI unfolds, the protocol and technology as a whole will have evolved considerably and there will be no further need for centralised incentivisation of core functions, as Spektrum Portals will be able to stay profitable from network use alone.

We assume that Spektrum Portals will also be able to fulfill the role of validators, as the computing requirement 20 years from now will most likely be insignificant.

WHY DO WE NEED TO CREATE A LAYER 1?

Why not use a token on another blockchain or an Ethereum layer 2, for example?

- Spektrum Networks is a wireless communications provider, a critical infrastructure service. Alongside other critical infrastructure sectors, energy and datacenter/cloud, it is what makes all online technology possible, including all blockchains currently in existence.
- We need to own our technical stack and to be responsible for what is going on with our underlying infrastructure and also have control over protocol evolution, as Spektrum Networks development spans over many years into the future.
- Relying on a 3rd party for our blockchain infrastructure and deploying key communications infrastructure on another, pre-existing blockchain would also create new stakes for malicious actors, increasing the incentive to compromise a network or conduct a type of attack that wouldn't otherwise make economic sense.
- Leaving aside the strategic aspects and considering only the business side of things, our own in-house blockchain is still the best bet we can make. The only true constant of the crypto space is the increasing rate of change. Opinions, influences, politics and crowd sentiment change constantly, at breakneck speeds and choosing to side with one of the "flavour-of-the-month" blockchains out there only to get confronted with an indirect scandal or face the shortcomings of a technology stack that is not our own can be severely detrimental to business.
- There are a lot of other unforeseen scenarios that could happen. Our opinion is that the reasons above are enough to justify the need for a proprietary layer 1 blockchain.

METaverse IDENTITY GATEWAY

By dramatically enhancing data security, blockchain is enabling telecom providers to unlock new opportunities surrounding identity management – paving the way for the telecommunications industry to diversify, evolve and grow.

Secure digital identity is a yet untapped resource for the telecom industry. Spektrum has the ability to provide identity-as-a-service with a high level of confidence – uniquely enabling us to become a preferred metaverse identity gateway and open banking identity provider in the near future.

The Spektrum smart blockchain allows us to create and share immutable digital identities for customers in a permanently transparent yet uncompromisable way. Seamless storage and transferrability of NFT access tokens and user avatars make the Spektrum blockchain the ideal choice.