Whitepaper

# BKK Metapolis Blockchain and Tokenization

**Tokenine Co.,Ltd.**

**Propose to the BKK Metapolis.co.,Ltd**

# INTRODUCTION

The Metapolis team is building virtual worlds where players can build, own, and monetize their gaming experience using TMC; Terminus token, the main utility token of the platform.

the technologies that make up the metaverse can include virtual reality—characterized by persistent virtual worlds that continue to exist even when you're not playing—as well as augmented reality that combines aspects of the digital and physical worlds. However, it doesn't require that those spaces be exclusively accessed via VR or AR. A virtual world, like aspects of Fortnite that can be accessed through PCs, game consoles, and even phones, could be metaversal.

And with Blockchain, a technology that permanently records transactions, typically in a decentralized and public database called a ledger. Bitcoin is the most well-known blockchain-based cryptocurrency. Every time you buy some bitcoin, for example, that transaction gets recorded to the Bitcoin blockchain, which means the record is distributed to thousands of individual computers around the world.

This decentralized recording system is very difficult to fool or control. Public blockchains, like Bitcoin and Ethereum, are also transparent – all transactions are available for anyone on the internet to see, in contrast to traditional banking books.

Ethereum is a blockchain like Bitcoin, but Ethereum is also programmable through smart contracts, which are essentially blockchain-based software routines that run automatically when some condition is met. For example, you could use a smart contract on the blockchain to establish your ownership of a digital object, such as a piece of art or music, to which no one else can claim ownership on the blockchain — even if they save a copy to their computer. Digital objects that can be owned – currencies, securities, artwork – are crypto assets.

Game items like decorations and crafts on a blockchain are nonfungible tokens (NFTs). Nonfungible means they are unique and not replaceable, the opposite of fungible items like currency – any dollar is worth the same as, and can be swapped with, any other dollar.

Combine Metaverse with Blockchain, it translates to a digital economy, where users can create, buy, and sell goods. And, in the more idealistic visions of the metaverse, it's interoperable, allowing you to take virtual items like clothes or cars from one platform to another. In the real world, you can buy a shirt from the mall and then wear it to a movie theater. Right now, most platforms have virtual identities, avatars, and inventories that are tied to just one platform, but a metaverse might allow you to create a persona that you can take everywhere as easily as you can copy your profile picture from one social network to another. Though will be transparently recorded their transactions on Blockchain.

# Blockchain Technology

Blockchain Technology is a type of database that consists of block and chain, hence the name Blockchain. At every specific interval, a new block will be created. The block is where data is stored. Each block will have its own address, which is uniquely generated from the data inside (hashing). In case someone attempts to change the data, the address of that block will be changed too. Each block will also point to the address of the previous block to create a chain of blocks.

These data will be duplicated to multiple locations, known as nodes. If someone attempts to change the data inside the block of a certain node, the chain will be broken due to the modification of the address. The system will know immediately that the data was intruded by someone and will overwrite corrupted data with a copy retrieved from another node.

Ethereum Blockchain is the second most popular blockchain after Bitcoin (rank from the value of assets held in the system). Introduced by Vitalik Buterin, a genius mathematician from Russia.

Ethereum Blockchain is unlike Bitcoin, very powerful, the Development team wanted Ethereum to be as functional as Bitcoin, but adding more functionality. nowadays Ethereum is a currency that can be applied to a wide range of businesses not limited to financial transactions.

Everyone can deploy a program code as logic to do something on the blockchain network, this feature of Ethereum is known as a smart contract.

## Smart Contract

The program code is written in Solidity language that can be deployed on the blockchain network. The smart contract can be used to develop many types of applications. For example, cashier cheque, or even more complex applications like voting, banking, supply chain tracking.

The smart contract is transparent and audit-proof. So, it is well-known for developing an application that consists of multiple parties to solve the trust problem between parties.

The smart contract is also widely used to issue a token. known as an ERC-20 token. This token can be used in many different ways. For example: as shares, loyalty points, currencies, and digital assets.

## Consensus

The consensus is the process to decide something together. In blockchain technology, the consensus is used to decide whether or not to store data to the system. One of the well-known consensuses is PoW (Proof-of-Work). PoW is simply giving authority to the one who works the most. PoS (Proof-of-Stake) is giving authority to the one who stakes money the most. In our case, we use PoA (Proof-of-Authority) which gives authority to the one we trust.

Comparison between PoA, PoW (Proof-of-Work), and PoS (Proof-of-Stake) High-performance hardware is not required. Compared to PoW consensus, PoA consensus does not require nodes to spend computational resources for solving complex mathematical tasks.

High throughput; scalable. (10K TPS out of the box) PoA only allows non-consecutive block approval from anyone validator, meaning that the risk of serious damage is minimized.

Predictable block time. The interval of time at which new blocks are generated is predictable. (In our case, block time will be set to 3 seconds)

High transaction rate. Blocks are generated in a sequence at the appointed time interval by authorized network nodes. This increases the speed at which transactions are validated.

## Web3 Standard

Web3 is an API standard to connect to any Ethereum network. This makes Ethereum more programmable so we can create more complex applications with blockchain.

## Binance Smart Chain, the Ethereum PoA Network

Binance Smart Chain is a type of Ethereum whose consensus protocol is PoA instead of PoW. This allows us to access all the features Ethereum has offered but better. The predictable block time has dramatically reduced transaction rate from 15 minutes to 3 seconds while also supporting more than 300 transactions per second out of the box.

The PoA consensus algorithm leverages the value of identities, which means that block validators are not staking coins but their own reputation instead. Therefore, PoA blockchains are secured by the validating nodes that are arbitrarily selected as trustworthy entities.

# Tokenomic

Tokenomics is a kind of business plan for a cryptocurrency (token). This is a balanced economic model of a token that takes into account the interests of all participants (investors, users, coin founders, developers, and so on).

In the traditional economy, economists monitor the issuance of a currency using official money supply data. The numbers they report are generally called M1, M2 and — depending upon the country — M3 or M4 as well. An in-depth explanation of the four M categories is beyond this tokenomics analysis: just know that M1 is a measurement of the most liquid monies, M2 is less liquid, and so on. These numbers help to enable transparency and monitoring of different aspects of the supply of a currency.

These numbers are important because throughout history, kings, queens and governments have had a habit of creating additional money in their country. It turns out that running a country or fighting a war can be very expensive, and it was not always easy to raise revenues or balance a budget, which meant that it was often politically expedient to simply create more currency.

In the modern world, things like bank bailouts and pandemic responses have required governments around the world to create substantial amounts of new currency very quickly.

While governments oversee this process, creating additional currency can cause a slow, or sometimes fast, reduction in the value of the existing money. We call this reduction "inflation" and it is most visible when the prices of the things we buy increase year after year.

Token Name: Terminus (TMC)

Token Address: 0x6F75AF1D651B0F04366882c6A96beBc6C411d02B

Token Total Supply:                   500,000,000 TMC

Token Allocations:

    Presale and Public Sale:      150,000,000 TMC

    Government Fund:               200,000,000 TMC

    Promotion and Marketing:  55,000,000 TMC

    Partner:                           50,000,000 TMC

    Developer Fund:                45,000,000 TMC

## Token Allocation

- Presale and Public Sale — 30%
- Government Fund — 40%
- Promotion and Marketing — 11%
- Partner — 10%
- Developer Fund — 9%
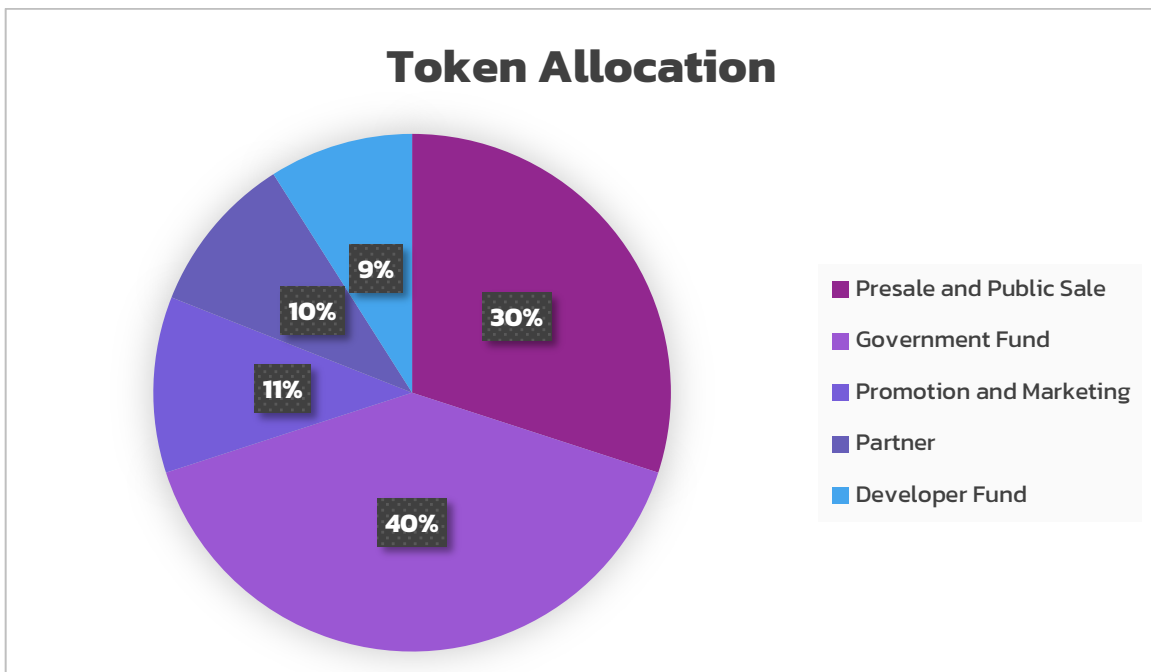
# Terminus Token Use Cases

## For LAND Purchase

The Terminus token (TMC) is designated to be used for purchasing LAND on the Metapolis project. LAND in the Metapolis project comes in different rarities and each unit of LAND is generating resources in different types depend on LAND's rarity.

## For NFT Purchase

NFT can be generated by holding LAND or gaining experience points in the Metapolis project. To shorten the process of obtaining certain NFT, user can purchase NFT listed for sale on Marketplace with TMC.

## For Exclusive Item Purchase

Every special occasion or season, the Metapolis project will release special time-limited NFT collection on Marketplace. This special collection can be purchased with TMC only. Special collection items give different in-game privileges and benefits which can be helpful in gameplay.

# Team and Advisor

**Chatchai
Payuhanaveechai**
Chairman of
Advisors

**Sukit Tangtemjit**
CEO & FOUNDER

**Wongvarich Silprasit**
CO-FOUNDER & Head
of Sale

**Sermyot Chalermsri**
CO-FOUNDER & Head
of Design

**Dome Charoenyos**
Blockchain Technical
Advisor

**Charuwan
Sariwongchan**
Head of Game
Development

**Thitika
Fueangwerojsakul**
Head of Coordinate

**Panu Srikem**
Webmaster

## Miscellanies

## ERC-20 Standard and Extensions

The ERC-20 is a standard of a smart contract for digital tokens, which ensures the integrity of the digital tokens and other De-Fi projects. We also add extra functionality to the token, called extensions. There are several extensions for many use cases. For example: burn stolen tokens from hacker accounts then re-mint the tokens back to victims. Allow users to add memo to the transaction which could be useful for taking note and make autonomous payment systems easier to implement.

## Token's Properties

**BURNER_ROLE**

Address of Burner.

Always:

0x3c11d16cbaffd01df69ce1c404f6340ee057498f5f0024619 0ea54220576a848

**DEFAULT_ADMIN_ROLE**

Address of Admin.

Always: 0x0

**MINTER_ROLE**

Address of Minter.

Always:
0x184f1bf14fd68e9d42dbcd3a1b713b3ed49b30fc87d1d664f4ed82abec5199f8

## Token's Read-only functions

**allowance**(address owner, address spender)
check whether the given address has sufficient permission to spend the token instead of the user.

**balanceOf**(address account)
check the balance of the given address.

**decimals**()
check digit of tokens.

**hasRole**(bytes32 role, address account)
check the role of the given address.

**name**()
get the name of the token.

**owner**()
get the address of the token owner.

**symbol**()
get the symbol of the token.

**totalSupply**()

get the amount of total supply of the token.

Token's Write functions

**approve**(address spender,uint256 amount)

set the allowance to the given address which grants a permission to spend the token instead of the user.

**burn**(uint256 amount)

burn (destroy) the token for the given amount from the user's address.

**burnFrom**(address from,uint256 amount)

burn (destroy) the token for the given amount from the given address.

**decreaseAllowance**(address spender,uint256 subtractedValue)

decrease the allowance of the given address to spend the token instead of the user.

**grantRole**(bytes32 role, address account)

grand role of minter or burner to the given address (for admin of token only).

**increaseAllowance**(address spender,uint256 addedValue)

increase the allowance of the given address to spend the token instead of the user.

**mint**(address to, uint256 amount)

mint (create) tokens for the given amount to the given address. (for minter only)


**renounceRole**(bytes32 role, address account)

renounce the role of the token (for minter and burner of token only).


**revokeRole**(bytes32 role, address account)

revoke the role of the given address (for admin of token only).


**transfer**(address to, uint256 amount)

transfer the tokens from the user address to the given address for the given amount.


**transfer**(address to, uint256 amount,  string memo)

transfer the tokens from the user address to the given address for the given amount and memo (text message).


**transferFrom**(address from, address to, uint256 amount)

transfer the tokens from the given address to the given address for the given amount and memo (text message). (for permissioned address only).


**transferFrom**(address from, address to, uint256 amount)

transfer the tokens from the given address to the given address for the given amount. (for permissioned address only).