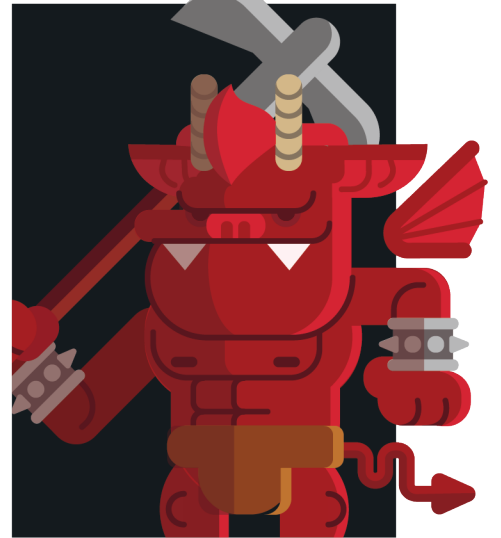# ETHER KINGDOMS

WHITE PAPER

v4.0 / March 28, 2019

Introduction

We see great potential in crypto-technologies as they pertain to mobile and computer gaming, as well as various other entertainment industries. We are proud to say that we are one of the first to break ground and form the crypto-gaming market because we're certain that in just a few years, there will be an explosion of various types of gaming projects incorporating this promising technology.

Meet Ether Kingdoms – a blockchain game that implements our vision of an exciting and engrossing game that can make real money for the player. A game for the wide audience, Ether Kingdoms is built around its own token – IMP[1].

Did you think ICO as soon as you read "token"? No, not this time. We are not holding an Initial Coin Offering, of which everyone familiar with the crypto-world is tired by now. We wanted to release Ether Kingdoms as soon as possible, so a few months ago we came out with the beta-version, making it possible for every player (even those that aren't hardcore gamers or blockchain enthusiasts) to enjoy our game right away.

With that said, we had a detailed development plan from the get go, with updates on mechanics and feature content coming out once-twice per month. In the second-third quarter of 2019 we will be unveiling our global plans that will go far beyond Ether Kingdoms itself... But it's too soon to talk about that.

[1] IMP token is an Ethereum based ERC20 token. The name comes from the word "Imp", meaning "little devil". When you see our characters, you'll understand why we named them that. But don't worry, they are quite awesome.

Overall Game Mechanics

THE BASIC ETHER KINGDOMS GAME MECHANICS CONSISTS OF THE FOLLOWING COMPONENTS:

1. Mining
2. PvP battles
3. Artifact equipment
4. Leaderboard participation
5. Far Realm battles
6. Fights with bosses and monsters

The game field of the main screen is a hexagonal grid that contains key game elements – the Castle and mines. The IMP token, or imps, can be mined in the mine. The imps are the Kingdom's main workers and warriors. One IMP token equals one imp under your command. Further, when we talk about tokens, imps, or IMP, please remember that all of these are synonyms and mean the same thing.

Your imps are very useful! Send them to the mine and they'll get you more IMP tokens. As long as your imps are hard at work, you have constant token profit. Isn't it great?

The Castle is the heart of your Kingdom. You can exchange your imps for lootboxes, which are chests that hide cool and very useful artifacts.

In addition to mining, your imps can battle the imps of other players. Click on the icon with two crossed swords, specify the number of imps you'd like to send, and sit tight, waiting for an opponent to accept your challenge. If you don't want to wait, you can call upon our highly trained bots, and enjoy watching the automated battle. Don't forget to turn on the sound!

The battle can either be a draw, or victory of one of the players, or the bot. In the latter case, the loser gives up a part of his imps and the winner takes them home. **If you are fighting the bot, it becomes the mirror copy of your own imp, so your chances of victory, defeat or draw lean towards the 40/40/20 proportion.** Keep in mind that the game keeps a commission of 10% for each battle.

Your imps have a list of characteristics, which you can see in the equipment window. You can also use this window to equip the imps with artifacts, making them stronger before each battle.

You may ask where do you get the artifacts? **Well, there are several ways of obtaining them via different in-game events: leaderboards (competitions among players), fights with global, local bosses and monsters.**

Architecture and Technology

Ether Kingdoms is based on the blockchain technology, but not all of its operations use the smart contract. You may ask why. This is due to the fact that the current Ethereum infrastructure has a number of limitations, such as low productivity and certain costs associated with each operation. This is logical, as the main concern of blockchain is the safety of information, and not speedy transactions for free. We came up with a solution to ensure that the game is fast and secure at the same time. First, let us describe the possible approaches to a blockchain-based game.

1. COMPLETE IMPLEMENTATION BASED ON THE ETHEREUM BLOCKCHAIN.

The world-famous CryptoKitties overloaded the Ethereum blockchain numerous times during its peak popularity times, which raised the price of transactions and slowed down their speed dramatically. It's unlikely that any player likes when this happens. Additionally, ERC20 token operations — and IMP is an ERC20 token — require much more gas than Ether operations. If we were to use Ethereum for mining and battles, each transaction would cost the player up to 210 thousand gas. A possible solution is Plasma.io, but at the time Ether Kingdoms was released, Plasma.io was not yet finished. This is why we stepped away from this solution— it's too expensive for the player, would not allow players to enjoy quick PvP battles, and would overload the Ethereum blockchain.

2. IMPLEMENTATION BASED ON ALTERNATIVE BLOCKCHAINS.

We also looked into NEM/XEM and Stellar blockchain platforms at the early stage of development. However, these don't function with MetaMask and don't support ERC721 standard analogs, which is necessary for the artifacts. Additionally, these blockchains don't have a decentralized exchange and a way of giving liquidity to the tokens in a timely manner, as well as present several issues with finding specialists to work based on them. Thus, we scratched out this option.

3. IMPLEMENTATION BASED ON OUR OWN BLOCKCHAIN.

We looked into this solution only hypothetically, as it would be too expensive for our players and very time-consuming for us to develop. Additionally, in order to create a game based on our own blockchain, we would need to attract additional investors either through an ICO or by ways of venture funds.

4. A HYBRID SOLUTION.

This worked for us and we believe is the best approach for the type of project we are creating! With a hybrid solution, tokens are added to the balance within the game's wallet, much like on any exchange. MetaMask is used to log into the game and to deposit/withdraw the tokens from the game. MetaMask is also used to verify all key actions in the game, such as sending imps to battle. All other ingame operations are stored on the server, which makes everything quick and free. As such, a balance is reached between productivity, reliability and transparency. This is why we chose this option for Ether Kingdoms.

Mines and Mining

There are 25 mines on the game field. At the beginning of the game, only one mine is available to the player, but with each successfully passed level, new mines open for business. We'll talk about player level and how to raise it a bit later. When the player reaches level 25, all of the Kingdom's mines become available.

Each mine has its own level – from 1 to 4 – which should not be confused with the player's level. All mines have level 1 when they open, which means that you can only send 100 imps to work in it. The greater the mine level, the more imps you can send there. The more imps you have working in the mine, the greater is the number of IMP they can mine daily! So it's in the player's best interest to upgrade the mine to its greatest level, so they can send as many imps as possible to work in it. For example, if you send 400 imps to a level 4 mine, they will render 2 IMP per day. The table below has detailed information on how this system works.

Mine Level	Max Number of Imps in the MIne	Necessary Player Level	Cost of Mine Upgrade	Max Daily % at Full Capacity[2]
1	100	1	-	0.125%
2	200	25+	2 IMP	0.25%
3	300	50+	5 IMP	0.375%
4	400	100	10 IMP	0.5%

Before a player reaches level 25 (player level, not mine level), they will gradually open one mine after another on the map of their Kingdom. After the player reaches level 25, they will be able to start upgrading the mines themselves. The upgrade happens with each mine separately and costs a small number of IMP. Between player levels 25 and 50, the mines can be upgraded to level 2. Between player level 50 and 100, the mines are upgraded to level 3. After player reaches level 100, the mines are upgraded to level 4.

On the main screen you will always see real-time information about how much your miner-imps are mining. It's obvious that the more mines you have, the more imps mine in them, and the greater the level of the mine, the greater is your profit! **Besides, there are a number of artifacts that increase mining speed. It`s not possible to buy these artifacts in the game anymore: their emission is finished, and now you can only find them on OpenSea.io item exchange platform.**

[2] In November 2018 the game mining speed was decreased twofold. All of the numbers stated in the table are relevant as of now.

Battles Against Other Players

As we've mentioned before, in addition to mining, your imps can fight other players' imps. Why would you want to send your imps to battle? Because you will receive experience points for each fight, and experience points help you grow, increasing the number of the mines in your Kingdom and the IMP tokens you can mine in them.

LVL[3]	EXP	LVL	EXP	LVL	EXP	LVL	EXP	LVL	EXP	LVL	EXP	LVL	EXP	LVL	EXP	LVL	EXP	LVL	EXP	LVL	EXP	LVL	EXP
1	-	11	113	21	323	31	633	41	1043	51	1553	61	2163	71	2873	81	3683	91	4584	101	6534	111	23934
2	10	12	133	22	353	32	673	42	1093	52	1613	62	2233	72	2953	82	3773	92	4676	102	7734	112	27034
3	20	13	153	23	383	33	713	43	1143	53	1673	63	2303	73	3033	83	3863	93	4768	103	9034	113	30234
4	30	14	173	24	413	34	753	44	1193	54	1733	64	2373	74	3113	84	3953	94	4862	104	10434	114	33534
5	40	15	193	25	443	35	793	45	1243	55	1793	65	2443	75	3193	85	4043	95	4957	105	11934	115	36934
6	50	16	213	26	473	36	833	46	1293	56	1853	66	2513	76	3273	86	4133	96	5052	106	13534	116	40434
7	60	17	233	27	503	37	873	47	1343	57	1913	67	2583	77	3353	87	4223	97	5149	107	15234	117	44034
8	71	18	253	28	533	38	913	48	1393	58	1973	68	2653	78	3433	88	4313	98	5246	108	17034	118	47734
9	82	19	273	29	563	39	953	49	1443	59	2033	69	2723	79	3513	89	4403	99	5345	109	18934	119	51534
10	93	20	293	30	593	40	993	50	1493	60	2093	70	2793	80	3593	90	4493	100	5444	110	20934	120	55534

It's very easy to send your imps to battle, just click the crossed swords icon and specify how many imps you'd like to dedicate to the fight. The greater your level, the more imps you can send. At the beginning levels, you can send no more than 10. Later, this number grows to 25, then 50, etc. At the highest levels, you can send as many as 500 imps to battle.

In the fall 2018, we introduceв battle packages against other players—**you just specify how many you are ready to spend and start searching. The number of fights and search time are adjusted automatically depending on your bet**. This allows each player to increase their levels and take higher places in leaderboards without wasting time waiting for an opponent.

If no opponent with similar level to yours is available , you can always fight our bot, which is a mirror of your own imp as far as characteristics are concerned, making your chances of victory, defeat or draw lean towards the 40/40/20 proportion. You can always check relevant statistics regarding bot fights on your individual stats page.

[3] Levels 121-130 will be added later.

The battle happens in an automatic mode – just sit tight and watch a video of how imps attack each other in a funny squabble. Fights are broken into rounds, with each round being an exchange of hits between your imps and the imps of your opponent. If the battle ends in a draw, each player leaves with what they came. If someone wins, the winner takes a portion of the loser's imps (between 20% and 80%). The game withholds a commission of 10% for each battle.

The higher the player's level, the stronger their imps become – they get more health points (HP) and the amount of damage they can cause goes up. With that, you can increase the characteristics of your fighters by equipping them with arti-facts. But we'll talk more about this in an upcoming section.

LET'S LOOK AT THE BATTLE'S ALGORITHM STEP BY STEP:
1. If two players send 50 imps each to a battle, the total prize pool is 100 IMP.
2. The game has a 10% commission of the total pool (10 IMP). The remainder is 90 IMP.
3. The winner and the loser are determined, as well as the medium of the prize pool. In our example, it's 45 IMP (90 divided by 2)
4. The winnings and losses are determined between 20% and 80% of the medium, which is 45 IMP in our case.
5. Let's say that this is 60%, or 27 IMP (45*60%). In this case, the winner will get (45+27) and the loser will come back with 18 IMP (45-27).

We admit that the battles against bots aren't designed to make money. Due to the even chances of winning, losing and draw as well as the game's com-mission, it's unwise to think you will make easy profit. Bots are necessary to quickly raise the player's experience level, which will in turn give them more imps due to the opening of more mines and their upgrade. Since experience points are given for each battle (1 EXP point for each imp you send to bat-tle), it's beneficial to go to battle even if you lose.
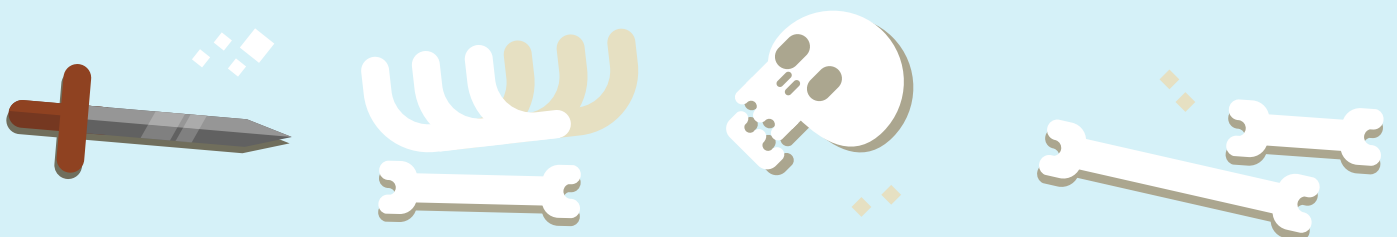
Equipment and Artifacts

The equipment window (imp icon) is there for you to see what battle characteristics your imps have and to equip them with artifacts. The main characteristics are health, amount of damage that can be caused, protection, chances of a critical hit, dodging and additional attack. Health and damage caused grow with your level, while the rest of the characteristics can only be changed with the artifacts (health and damage can, as well). The rarest and coolest artifacts can drastically change the battle's outcome. For example, they can lower or completely diminish your opponent's chances of a critical hit.

A reminder: in battles against bots your chances of winning or losing tend to lean towards the 40/40/20 proportion, because the bot has the same characteristics as you do. The issue with PvP and other PvE elements, such as fights with bosses and monsters is different: here, artifacts directly influence your battle efficiency.

Artifacts can be obtained in different ways – purchased in the Castle, won in weekly leaderboards, received during special offers (regular, but limited in time), received as a reward for killing bosses or monsters or bought on the special exchange OpenSea.io.

If you received the artifact in the game (for example, opened a lootbox with one), you will see a Claim button under its image in your equipment window. When you press the button, you will be offered to turn the artifact into an ERC721 token[4]. Doing so will cost you some gas and the final price of the artifact will be reflected in your MetaMask wallet. You will need some time after the transaction to see the token in your MetaMask. It will still be available in the game, but the Claim button will disappear, with the MetaMask button (head of a fox) replacing it.

After this, you can do anything you wish with the artifact token – sell it on Opensea, give it to a friend, transfer it to another wallet, etc.

[4] The key feature of the token of this standard is its unique and individual characteristics. We will release a limited number of ERC721 artifact tokens, after which they will be in free circulation within the Ethereum blockchain. You can see the history of each token (when it appeared or changed ownership, etc.) on the blockchain itself. Practically, such tokens aren't just beneficial to the players, but are collectible items with unique properties within the Ethereum blockchain. They will remain on the blockchain as long as the block chain itself exists.

You can use a limited number of artifacts on your imp, and each of them is related to a specific slot:
- 1 slot for the helmet
- 2 slots for the weapon
- 2 slots for the defense (shield)
- 1 slot for the armor
- 5 slots for additional objects
- 1 slot for the pet (can be taken to battle)

Please note that there are different artifacts in the game. For example, there are artifacts that can raise one parameter, but lower another. Or artifacts that can be reloaded – these have a limited number of uses, after which they need to be reloaded. You'll need imps to do so and charge is used only during PvP battles.

Tutorial Mode and Far Realm

The game has a Tutorial Mode where you`ll receive 200 virtual tokens. The mode starts automatically when you start playing and allows you to reach level 15. Note that after level 15 your virtual IMPs will disappear and you will be able to start playing using actual tokens. If you want to continue playing without investing money, follow our Discord channel – from time to time we host special offers there, which can help you earn some tokens to fulfil offer requirements.

At the beginning of 2019, a big update was released, called Far Realm. In this game mode players will fight for buildings that provide valuable bonuses, including mining bonus!

To start playing in this mode you need to use the portal. This way you can transfer some portion of your free IMPs to a separate pool displayed on the new game mode screen. You can return IMPs from the Far Realm at any time by pressing the corresponding button.

All actions in the Far Realm are performed by a squad of imps. To create the squad you have to click on any deployment tile or use the "Create Squad" button. After the squad is created, you can see its current stamina and squad size in the status bar in the lower portion of the screen. Using "Reinforce" button you can add imps from the Far Realm pool, but you can do so only when the squad stands on a deployment tile.

Imp squad can attack any building of any player as soon as it reaches it – stamina goes down during the move. The fight shares the same principle as the common fight, but your fighter will get stats bonus provided by the buildings you own. Damage and health of both imps is directly modified by the difference in the amount of imps from each fighting side. Item bonuses are applied as usual.

After a building is successfully captured, you can place the garrison to secure the building. Other players will have to defeat it to capture the building. You just have to select a squad that stands on the nearest tile, click on the building and choose the amount of imps you would like to garrison.

Remember that it can be very dangerous to travel in the Far Realm – you can come across terrible monsters at any moment!
If this happens you have to choose either to run and lose all your stamina or fight and get experience points and valuable reward if you manage to win.

Token Distribution

We will release a total of 13 million IMP tokens. Of those, 2 million will be used to finance the project development, 1.3 million will be used for airdrops and leaderboards, and 9.7 million will be available for mining.

As soon as the token circulation reached 3.5 million IMP, we cut in half the speed of token mining. All of the players' wallets, exchanges and the game pool will be considered when determining the total circulation, not including the IMP that are dedicated to project development.

If players mine IMP actively, all 13 million tokens will be in circulation by September of 2019. By this time, we will implement a mechanism to gradually burn the tokens to minimize the supply and raise the token price.

AIRDROP AND LEADERBOARDS – 1 300 000

10%

DEVELOPMENT – 2 000 000

15%

IMP

75%

MINING – 9 700 000
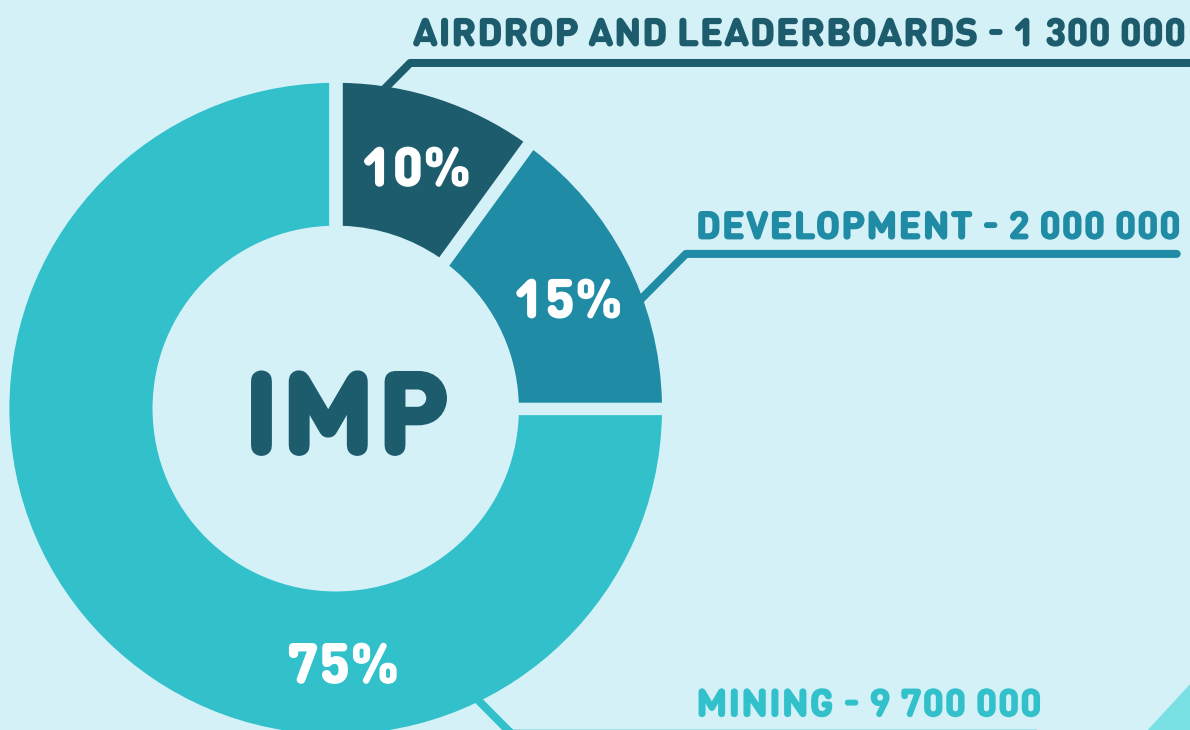
Roadmap

MAY 2018 – RELEASE OF THE MVP VERSION (COMPLETE)

1. Make the MVP version openly available.
2. List IMP on exchanges.
3. First airdrop – 400 000 tokens.

JUNE-AUGUST 2018 – MAIN RELEASE (COMPLETE)

1. Introduction of the ERC721 tokens as battle trophies that give game bonuses. Such bonuses can be modifiers of the chance to win, or neutralizers of such chances of your opponent.
2. Start of the mining campaigns.
3. Second round of the Airdrop – another 300 000 tokens.
4. Surprise update with pets for your imps.
5. Update of the White Paper according to the changes made in the game.
6. Release of approximately 75 types of artifacts.

THIRD-FOURTH QUARTER OF 2018 – SET OF FUNCTIONAL AND CONTEXTUAL UPDATES (COMPLETE)

1. Packaged PvP mode – you can start several battles at a time against other players. The main victory determining factor will be your imps' artifact equipment.
2. Expansion of PvP interactions.
3. Over 150 new artifacts, a part of which will have new abilities.
4. Local and global bosses-opponents.
5. Cutting the mining speed in half. Only 50 best players will receive a unique artifact that guarantees the maximum mining speed of 1%.

FIRST QUARTER OF 2019 – GAME CONTENT EXPANSION (COMPLETE)

1. New game mode – Far Realm.
2. Unique skins and artifact sets.
3. Random encounter mechanics and monster fights in Far Realm.
4. Option to buy IMPs by credit card.
5. Next exchange listing.

SECOND QUARTER OF 2019 – HIGH-LEVEL CONTENT

1. Artifact disenchantment mechanics.
2. Rune mechanics – new artifact type, allowing usage of special skills during battles.
3. Improving the Far Realm, adding new buildings.
4. Full-fledged in-game shop.
5. PvP-mechanics improvement.

THIRD-FOURTH QUARTER OF 2019 – FURTHER DEVELOPMENT PLANS ANNOUNCEMENT

1. End of mining, introduction of token burn mechanics.
2. Huge announcement of further development plans, project roadmap update.
3. Community Driven Development: your ideas – our implementation! Addition of several features based on the community's request.
4. Weekly in-game events.

Project`s further development plan as well as mobile app and clan wars release date will be revealed in third-fourth quarter of 2019.

Our links

CONTACT ETHER KINGDOMS:

https://twitter.com/imptoken

https://discord.gg/xQrdRX2

https://t.me/imptoken_ru

https://t.me/imptoken

https://medium.com/@imptoken

https://www.facebook.com/imptoken/

https://bitcointalk.org/index.php?topic=4087326.0

https://www.reddit.com/r/imptoken/

ETHER KINGDOMS ON EXCHANGES:

https://www.livecoin.net

https://mercatox.com/exchange/IMP/BTC

https://ddex.io/trade/IMP-WETH

https://www.bitfinex.com

IN-GAME STATISTICS AVAILABLE HERE:
https://game.imps.me/stats

TOKEN METRICS AT CoinMarketCap

ARTIFACT EXCHANGE: OpenSea.io