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ARCONA[®]

augmented reality ecosystem
[developed by Pilgrim XXI](#)



1 SUMMARY

Arcona is an information space which integrates the virtual and real worlds into a single ecosystem. At the heart of the system is a platform which provides a link between the augmented reality layer and natural markers on the earth's surface, enabling content to be positioned and managed remotely. This layer, what we call the Digital land, is directly linked with the real surface of the Earth through the use of geospatial data.

The Digital land's natural limit is set at 12% of the land utilized by humans. This scarce asset is the commodity and basis of the ecosystem's economy. The Arcona infrastructure includes a Digital land register and any digital assets within the platform.

It is built utilizing blockchain technology, and is a peer-to-peer network. We have come to ICO because in 2019, we plan to already launch the process of generating the Digital Earth. The first digitized areas will be in ten of the world's largest cities: New York, London, Paris, Tokyo, Beijing, Rome, Mexico City, St. Petersburg, Istanbul and Barcelona.

In the first half of 2018, still before the platform is launched, we will see the public release of ARViewer, and a marketplace for trade in arcons. The Arcona platform is being developed by the professional team at Pilgrim XXI.



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We are the first Russian IT start-up to operate in the global augmented reality market and the tourism sector. We have allowed tourists to combine real travel with time travel. Using a smartphone and AR headset, travellers can witness lost architectural wonders and historical events in real time and space.

In 2014, Pilgrim XXI launched the world's first outdoor augmented reality park, and has now created a network of eight parks over 6 countries with a total area of 7,700 ares. Since 2015, we have been making extensive investments out of own funds into researching distributed GIS, augmented reality technologies, 3D simulation, computer vision and artificial intelligence.

We are developing a unique platform to remotely manage an augmented reality environment. Our utilization of ICO and blockchain architecture will enable us to transform our project into a full ecosystem which will connect users and developers on a P2P basis.

We would like to invite you to become one of the first landowners in our Digital land today. Only during the ICO, token holders in Arcona will be able to choose and reserve land plots in the first 10 locations on the planet.



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2 RATIONALE

Computers will soon be more powerful than ever before. They will become an integral part of your everyday environment. Instead of logging into your computer or smartphone, you will be able to simply enter a room or go out into the street and manipulate the environment around you in whatever way you like without having to take a gadget out of your pocket. (Walt Mossberg)¹

Noting the pace at which communication technologies are developing, many scientists and designers have predicted dramatic changes to our gadget-filled world. It will just be a few years before smartphones are replaced by new devices, whose groundwork is being laid by numerous start-ups led by figures such as Elon Musk, Rony Abovitz and companies like Microsoft, Amazon, Facebook, Apple and Sony, who do not want to be left behind in the technological race.

The technological revolution is taking the world around us out of this world. Elon Musk is the man behind Neuralink, a new project whose goal is to create a neural interface to allow people to interact by the power of thought. The IT Market leaders Google, Apple and Microsoft are all developing standalone AR headsets capable of projecting 3D imagery directly onto the retina. According to Microsoft's Alex Kipman, these technologies will completely replace smartphones.

Indeed, why carry a bulky device around with you if your calls, messages, TV channels and games can be sent directly to your headset? And all this diverse content in this almost mystical environment will be, quite literally, at our fingertips. Isn't this what our childhood dreams of magic looked like?

¹ [Mossberg: the disappearing computer](#)



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Augmented reality headsets will soon be available everywhere.. In this truly landmark moment in time, humanity will require a universal environment which unites the real and virtual worlds in a single information space. And this environment is being created today.

This interlacing of the virtual layer with real landscapes is achieved through a combination of mobile device tracking technologies (already in the pipeline with Google Tango, Microsoft HoloLens and Apple ARToolKit) and geographical information systems (GIS). This involves geospatial data, where remote sensing is used to generate digital elevation models and build textured 3D virtual landscapes in stunning detail with an accuracy of up to a few centimetres.

Remove the need for on-site developers to link virtual objects to real landscapes, and you'll really speed up the integration of the digital reality. Remote positioning of augmented reality content is a step towards scaling the technology globally.

The unification of the real and digital world is unavoidable, and there are a few key ideas we'll discuss with everyone who wants to be part of this process: the design and implementation principles behind the augmented reality ecosystem², the link between the digital layer, the earth's landscape and geographical coordinates, and the value of digital land and its growth as the system's plots are put into use.

3 CAPABILITIES

3.0.1 Remote Positioning

Tools like the incredible ARKit, Project Tango and Windows Holographic have provided mobile devices with objectively new capabilities. Motion tracking enables a device to understand its position and orientation when moving in three-dimensional space. Area learning uses the visual cues to enable the device to recognize its location and correct its movements. Depth perception sensors can tell the device the shape of the world around, using point clouds to set up virtual interactions.

However, let's say you're an augmented reality developer and you live in Paris, for example. You want to set a reanimated Godzilla loose in the streets of Tokyo, or perhaps revive the Bastille in Paris, or simply plant a line of snow-covered firs or southern palms along the street outside your window.

You'll have to spend days, weeks, perhaps months linking your installations with the real world. Add to that the travel costs and hotels (if you decided to do your experiment on Tokyo). On the plus side, you would certainly get fit walking circles in the street scanning everything around you to give your app the required area learning.

You'd have to do quite a bit of running since those visual markers you scanned half an hour ago will have already changed. Yes, and the sun has that annoying tendency to move around the sky and change the optical characteristics of a space required for depth perception. As a result, not only your markers will look different depending on the time of day, but also depending on which day of the year it is, too.

So you've spent a Hollywood budget making Godzilla appear in Tokyo, or bitten the bullet and gone to the street outside your house every hour for a whole year. And, providing your markers in Tokyo haven't been covered up by new advertising, your neighbour hasn't repainted their fence, or your markers haven't been blocked out by snow or a blossoming sakura, then, and only then, when people who've downloaded your app come to the place you've been "treating", they'll see the wonderful things you've created in augmented reality.

² [Ecosystem](#)



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Arcona is a remote positioning and content management system for augmented reality. You will be able to embed your installations remotely in any location on the planet. You will gain access to high-traffic locations, where you will be able to build entire worlds integrated into the real environment.

3.0.2 Place marketing

In 2014, we launched the world's first augmented reality park in the Latvian town of Ludza. It's a small town with a population of about 5,000. In three years, over 200,000 people came to see our reconstruction of a Teutonic knights' castle.

Our augmented reality attraction increased the tourist flow by 30% a year. The amount of time tourists spent visiting this landmark also went up from 15 minutes to two hours. This means real customers for local businesses and a welcome supplement to the town treasury.

In 2016, we all saw Pokémon Go bring over 100 million people to the streets around the world in just two months. We like Pokémon because they showed us how even the simplest virtual objects, attached to the physical world very conditionally, can increase the attractiveness of any location, and affect people's behaviour and perception.

Arcona is a system that will allow future generations of Pokémon to use the real landscape and play proper hide-and-seek with you. And if you're of a more serious bent, it will be possible to link 3D objects of any complexity with no space limitations at the click of a button.

3.0.3 New jobs in the P2P economy

Expert predictions foresee sweeping job losses in a number of economic sectors resulting from the introduction of robotics and artificial intelligence. On the upside, many of us have been tangled up in virtual worlds since our childhood, where the games we played equipped us with various skills, including the ability to create 3D objects and trade in them. Finally, these skills might find their real-world application.

In order to get our Arcona ecosystem working effectively, we plan to open a marketplace – an online portal where producers and consumers will exchange resources and pay for them using the platform's internal tokens. The portal will primarily be used to sell content, software and digital land.

The Arcona system start putting up a wide range of tasks on the marketplace in the form of an auction. Arcona will offer a price for the best solution. The higher the sum, the more developers, actors and other professionals will be involved in the project. Similar systems are already in place on sites like Threadless, 99Designs and TopCoder.

Arcona Will use the Blockchain as a ledger to identify who owns what (land, content, etc) and who has the right to transfer it as well as registering all transfers. Smart contracts based on blockchain technology will guarantee every content creator and programmer copyright protection and ensure automated payment for the use of their intellectual property. Smart contracts will also protect the rights of content and landowners.

Arcona will make it possible to extract real-world value from the skills developed in the virtual gaming space. This will give millions of people the opportunity to make a living again in a world much more populated than any virtual universe.

During our work on the project, we discussed some of the possibilities for the practical application of AR technologies with business professionals from various different sectors. When creating this document, we realised that the list of use cases could go on endlessly.



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In the end, we decided only to share the ideas which have a real humanitarian value and are sure to be the first to affect the augmented reality market. These areas include the media, advertising, architecture and design, games and entertainment, tourism, and education. You can add any projects you find interesting yourself and rest assured that they have the potential to become part of the Arcona economy.



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4 DESCRIPTION

Arcona is a universal information space which unites the real and virtual worlds in a single ecosystem. It is a peer-to-peer network, whose infrastructure includes a Digital Land Registry and other digital assets.

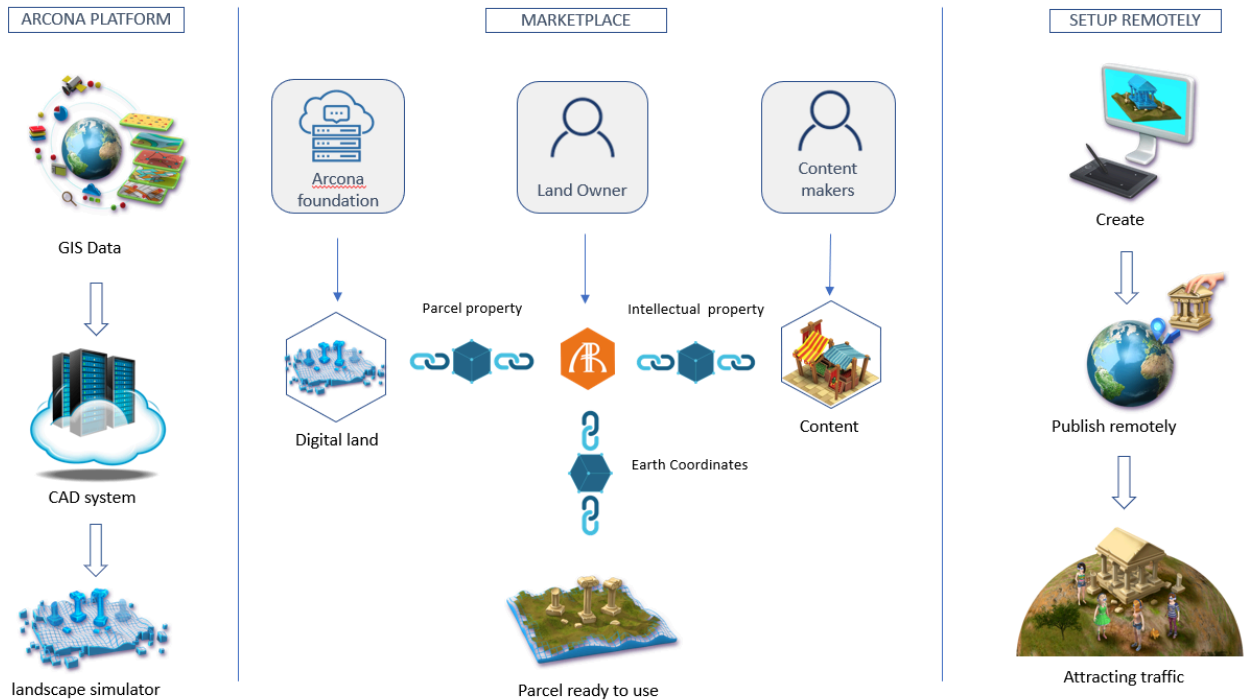
At the heart of the Arcona ecosystem is a platform which combines the functions of distributed GIS, augmented reality, 3D simulation, AI and blockchain architecture. The augmented reality layer can be accessed on location using a range of mobile devices (smartphones, tablets, smartphones with AR headsets, standalone AR glasses and headsets like HoloLens, AR contact lenses, etc.) using the customer-facing app AR Viewer.

AR Viewer is a free, cross-platform multi-user software programme which enables participants in the ecosystem to see augmented reality objects in a real-world environment.



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ARCONA AUGMENTED REALITY ECOSYSTEM



4.1 TECHNOLOGY

Components and functions

AUTOMATED MODELLING SYSTEM FOR THE AUGMENTED REALITY ENVIRONMENT:

This system performs the following tasks:

- Builds 3D landscape models based on high resolution geospatial data obtained from GIS and other information in the public domain (photos, etc.);
- Identifies likely paths of movement for the user in the given land plot;
- Generates objects-markers to determine the user's location (the location of the user's device);

DATABASE MODULE: This module executes a DBMS to store landscape models and provide remote access to them to deal with various types of request.

INTEGRATED MODELLING ENVIRONMENT: A toolkit to create and maintain software and to manage and edit content.

AR VIEWER: A freeware client for mobile devices with a positioning system used to correctly display augmented reality objects at a given location.

SMART CONTRACT: A set of scenarios which enable users to adjust their P2P relationships and payment methods for various platform functions. A fast payment system for internal transactions with low commission. It is the key to the rapid economic development of Arcona's world of augmented reality.



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4.2 DIGITAL LAND

The Arcona economy is based around the generation of an augmented reality layer called the Digital Land. It is a limited digital asset described in the Ethereum³ Smart Contract, and it can be acquired in exchange for an arcona ERC20⁴ token.

4.2.1 Why buy digital land plots?

Owning a land plot of Digital land is an exciting opportunity for creatives and a profitable occupation for private enterprise. You can buy land to place the virtual objects you created or purchased on the marketplace in the real world.

Your land means your rules. You can transform the world on the lawn outside your house or develop a serious commercial project thousands of miles away on another continent. The digital layer is your domain, and you can fit it out to your taste.

Every plot of Digital land is linked to a specific real-world location – a place where you can bring real people and share the results of your labour by organizing shows, presentations and games.

You can open a virtual shop in a real location and start selling any sort of ware. If you want to do all this online in any location globally without leaving your house, you'll need to get yourself a digital land plot.

4.2.2 Specs

The main service provided by Arcona is the augmented reality layer, the Digital Land. This system provides access to a development framework containing a 3D simulation of the earth's landscape and the functionality to create an augmented reality environment.

Logically, since the Digital Earth is linked to the earth's surface, it's scope has a natural limit at the 12% of the earth's surface utilized by humans, i.e. 18 trillion m²⁵.

The augmented reality layer, geared up to host remotely positioned virtual objects, will be divided up into equal parts of 1 are each. Land plots will be purchasable in exchange for a token called an arcona.

A single physical server can generate a plot of around 200 x 200 m. Each plot can support a limited number of virtual objects and simultaneous connected visICOrs. This is known as the land's capacity.

By collecting a pool of several land plots, the capacity can be increased, and more objects and connected users can be supported. With Arcona, it is possible to pool together a group of non-adjacent plots and transfer the capacity of all the plots within the pool to a single plot.

This is called capacity transfer. This solution makes it possible for the system to generate the augmented reality layer and make full use of digital land plots lying outside of high-traffic areas.

³ [Ethereum](#)

⁴ [ERC20](#)

⁵ [UNESCO World Heritage map](#)



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4.2.3 The Digital land as a commodity

What makes the Digital land unusual as a commodity is the fact that it is not the land itself that is bought, but the income that can be brought in through the development of infrastructure and activation of entrepreneurial potential. In other words, you buy the right to receive a regular income as a result of your labour. The more you make from the plot, the higher the cost of the land.

Every plot of Digital land comes with geographical coordinates, landscape marker descriptors, a basic set of tools to manage AR content, and a channel to contact the platform's management system.

4.2.3.1 Types of digital land plot

- Global network: Arcona landholdings and private landholdings.
- Region: a 200 x 200 m section of the network or 40,000 m² of digital land.
- Plot: a part of a region with an area of 1 are (100 m²).
- Private landholding: one or several plots owned by a single user.

Users can remotely buy, manage, lease and sell their augmented reality layer plots. Within their holdings, users can create, display, share or sell augmented reality content.

A user's right to ownership over virtual land is encoded in a blockchain contract with the registry number for each 1 are (100 m²) plot linked to a specific set of geographical coordinates.

4.3 ARCONA TOKENS



The arcona token is equivalent to the cost of digital assets and is the universal internal currency of the Arcona ecosystem. It will be used for the purchase of all digital goods and services within the ecosystem.

The arcona is created using blockchain technology, on the basis of an ERC20 smart contract which records the rights of the authors and owners of digital assets and automatizes the payment system for the use of intellectual property. A smart contract⁶ also encodes geographical data, registry numbers for digital land plots, plot owner IDs, registry numbers for digital assets, author IDs, IDs for the owners of digital assets, and the cost and conditions for using digital assets.

Blockchain technology makes it possible to guarantee equal conditions and additional protection for the property rights of the owners of digital land within the Arcona platform, as well as the protection of copyright for developers and artists living in any country of the world. Blockchain technology makes every transaction within the system more reliable, transparent, and mobile.

The arcona will assure the infrastructure required to build the new digital layer in real space. It will enable the ecosystem to replicate itself and be filled with a wide variety of content.

The total number of arconas emitted will be 100 million.

⁶ [What is the sharing economy?](#)



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4.4 ECOSYSTEM RESIDENTS

The following categories are considered resident in the ecosystem: landowners, tenants, developers and users.

Landowners may buy and sell land, lease it, and place AR content in land plots. Tenants may rent land, sublease it, and place AR content within a rented plot as per the conditions stipulated by the landowner.

Developers can create software or content. A developer may define the rules for usage for the works they create.

A user in the real world can access all the system's services through AR viewer and can buy and sell digital assets.

Landowners can bring an unlimited number of users of augmented reality content to the plots they own. The popularity of each plot will be dependent both on the quality of content itself, and on the popularity of the real terrICOrY.

Therefore, the demand for AR content in Paris will naturally be considerably higher than in the Mauritanian desert. This factor will contribute to the development of a secondary market for land, rent, content and advertising. Landowners control what content is published within their holdings. This content may vary from a static 3D scene to an interactive system. A landowner may do as they wish with their land plot, including the following actions:

- Place any digital content within their terrICOrY. The smart contract may include a number of restrictions as to the nature of the content (content associated with violence, adult scenes, etc.)
- Schedule a showing of content for users (games, guided tours, educational programmes, promotions, AR attractions, etc.)
- Lease the plot or sell it to another owner.
- Since the basic amount of server space allocated to a single plot is limited, the owner can buy additional capacity from the community, or buy unoccupied land plots and transfer the capacity to their own.

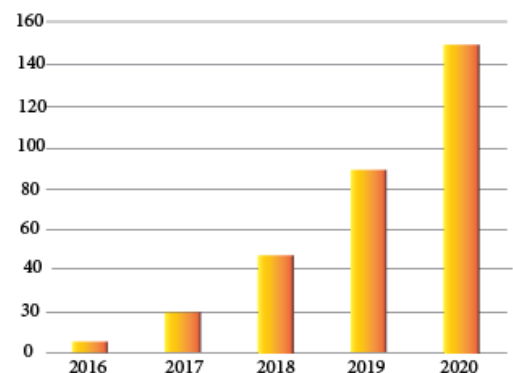
Content creators, i.e. code developers, 3D artists and the authors of other works uploaded into the system can make use of copyright. These conditions are described in the smart contract.

There are bonuses available for users who help to develop or test the system. They help to improve the positioning system in the surrounding area by accepting the transfer of data from their device to the system server.

4.5 MARKET ANALYSIS

Our company works in the information and communication technologies (ICT) sector, which is involved in the creation of infrastructure and components to assist with modern computing technologies.

Although there is still no generally accepted definition of ICT, the term is usually applied to all devices, network components, applications and systems which collectively enable people and organizations to interact in the digital world. Since its creation, the company's main focus has been on developing augmented reality (AR) technologies.





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Overview of the AR market

The augmented and virtual reality markets are currently undergoing rapid growth and becoming one of the key drivers of the IT industry. According to a 2016 survey from Juniper Research, the market has a total volume of about USD 3 billion (with 1 billion of that in AR, and 2 billion in VR), and by 2020, it is expected to exceed USD 150 billion (AR accounting for 115 billion dollars).

AR market 2016 has a total volume of about USD 3 billion and by 2020 it is expected to exceed USD 150 billion

All leading IT corporations are now in some way contributing to the growth of AR. Google, Facebook, Apple and Samsung have announced AR platforms already in development. Investments in AR are also exhibiting an upward trend. Between 2014 and 2016, the total volume of investments increased from USD 250,000 to USD 1.6 billion.

Examples of deals made in 2015/2016:

Magic Leap raises a record round of funding in the AR market, receiving USD 793.5 million from a pool of investors led by Alibaba. The company has an estimated value of USD 4.5 billion;

Google buys Eyefluence, a company developing AR/VR eye-tracking technology, for USD 14 million;

Apple buys Metaio, a company developing an AR platform, for USD 30 million;

DAQRI acquires ARToolworks, the developer of software for Hololens-style headsets, for USD 38 million;

PTC buys Vuforia, the developer of an AR platform, for USD 65 million.

AR Market trends

Until 2016, the market dynamics were determined by companies providing SDKs for smartphones with standard cameras. Over the past few years, a large number of start-ups have been bought up by industry giants like Facebook, Google and Apple.

Other hangers-on, like Aurasma, Wikitude, as well as the market leader Vuforia, are focused on computer vision and tracking flat images and single 3D objects in real time and space. In April 2017, Facebook and Snapchat announced that they were developing an AR ecosystem for their users. According to Digi-Capital, the “platform war” has attracted market newcomers such as WeChat, BaiDu, Alibaba.

The key technological trends are still contactless positioning systems based on point clouds and the improvement of 3D marker recognition technologies, which essentially recognize any object in the surrounding world.

The most notable events in the last year were:

The AR game Pokémon GO came to the market, becoming an international hit and in doing so taking augmented reality to a wide audience of users. The game’s developer Nintendo’s market cap went up USD 14.8 billion just a week after the release.

Apple released its ARKit framework, which made augmented reality an integral part of the iOS operating system. The toolkit is designed for developers and has great potential to bring the technology to mass market users.



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AR projects on ICO

- Augmentors: a turn-based war game based on bitcoin blockchain. <https://www.augmentorsgame.com>
- Reality Clash: a first-person shooter-style game. <http://reality-clash.com/>
- Decentraland: a virtual reality gaming ecosystem. <https://decentraland.org/>
- Cappasity: a platform to create, integrate and analyse 3D, VR and AR content. <https://cappasity.com/>
- Neverdie: an Ethereum-based gaming platform with AR elements. <https://neverdie.com>
- Lampix: a device to create augmented reality environments on flat surfaces. <https://lampix.co/>
- DMarket: a gaming marketplace to trade virtual items with AR elements. <https://www.dmarket.io>

What makes Arcona stand out from other AR projects on the ICO market is its universality. It has from the outset been designed to incorporate augmented reality in all areas of real-world business. It is not confined to the gaming industry like the vast majority of other projects (Reality Clash, Augmentors, Neverdie) or to the development of 3D content (Cappasity).

Arcona may be put to great effect in real estate, tourism, media, advertising, education, and the art industry. Arcona is a simple and convenient means of delivering AR projects of any complexity and style.

Apart from this, Arcona is 100% real-world oriented: all projects within the system will be integrated into the world around us. At the same time, it will make it possible to develop, use and monetize digital land remotely from anywhere in the world. No existing project offers such capabilities.

For comparison, Decentraland is a system which creates a virtual world without reference to real space and with a focus solely on the gaming industry. Lampix allows you to create an augmented reality environment, only supported by their own device with limited range.

Competitive advantages of the Arcona platform

1. Accurate remote placement of augmented reality objects in a changing environment.
2. The ability to link virtual content with real landscapes anywhere in the world regardless of size.
3. A ready-to-use network of markers anchored to the landscape all over the planet.
4. An open, modular architecture making it possible to integrate third-party solutions.
5. A universal augmented reality environment connecting developers and consumers.
6. The ability for a wide range of users without any particular programming skills to create and monetize content within the augmented reality environment.
7. The ability to visually combine virtual and real spaces which correctly adapt to the user's movements.
8. The ability to significantly reduce the load on mobile devices when carrying out computer vision-related tasks.
9. The ecosystem has a serious social significance, since it gives creative people the opportunity to present their projects to the wider public.



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10. Arcona will be a unified platform where a broad community of developers and users will be able to communicate and share experience, which will lead to an acceleration in the growth of AR technologies, and make the platform an industry standard.

4.6 USE CASES

Markets	Buyers	Platform usage options
Advertising	Brands, Local companies	Ad placement
AR development	AR App developers	Saves time, money, and production resources. A convenient development environment, the ability to provide their work for a wide audience.
	Users	
	IT Companies	
Construction market	Project companies	Демонстрация проекта клиенту и инвестору с помощью AR приложений
	Constructors of high-rise and low-rise buildings, infrastructure facilities.	The solution for integration into the real landscape of virtual building projects from concept stage to production stage. - Demonstration of the project to the customer and investor. - MonICOring the stages of construction and their adjustment, staff training and support for high-tech production stages. - B2C sales support
Entertainment market	Game Developers	Solution for creating interactive multiplayer gaming projects. Attracting more users, the ability to quickly and regularly change the content. Change and supplement the content of any area expanding the location.
	Entertainment company: Mass entertainment, representations	The solution for creating interactive events for a specific event: Attracting more visICOrs, the ability to quickly and regularly change the content for a specific event.
	Promotion company	Promotion of films. Placement of virtual characters of films, trailers, creating a new format for demonstrating the plot in a real environment.
	Theme parks	The solution for completing physical attractions: quests, games, climbing walls, just visual effects, attractions built on the interaction of virtual objects with real space. Gaming and advertising content both on the terrICOr of the attraction and in any places of the meeting of the target audience to attract more visICOrs, the ability to quickly and regularly change the content, additional monetization.



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	ART GALLERIES	The platform for the introduction of its own content will allow: Revitalization of paintings, providing additional information about art objects, creating independent street art objects. Attracting more visICOrs, the ability to quickly and regularly change the content, additional monetization.
	Museums and exhibitions	The platform for the introduction of its own content will allow: providing additional information about museum facilities, creating independent objects. Virtual demonstration of objects in archives and stockpiles. Attracting more visICOrs, the ability to quickly and regularly change the content, additional monetization.
Travel market	Tourist administrations	Delivery of finished projects with subsequent maintenance: reconstruction of lost architectural objects, events of the past for memorable dates and holidays.
	Navigation services	Automation of the processes of building navigation systems in landscapes with complex terrain in a dynamically changing environment. Providing navigation services with the ability to create AR / VR help systems and hints at an arbitrary point on the surface of the planet. Expanding the types of information provided, additional monetization.
	Travel agencies, guides	Ready-made solutions for creation of interactive excursions: reference information in AR format, bright visual effects, reconstruction of lost historical objects and events of the past.
Education	Preschool	Creation of modern projects to improve teaching methods for children and adolescents, built on visual perception of information. Training of specialists of a wide profile with the help of various simulations. .
	School	
	Higher education	
	Special courses	

5 ECONOMICS

The Arcona system can be monetised in the following ways:

- direct sales of land plots adapted for use with the Arcona platform from the Digital land holdings,
- royalties⁷ equal to the commission taken for transactions within the system (for example the purchase and sale of arconas, resale of digital land on the secondary and lease markets, uploading of custom AR content, such as 3D models, textures, animations and scripts into the system.),
- sales of content within the system.

The system offers the following services through its own marketplace:

Service
Purchase and sale of arcona tokens at the average exchange rate.

⁷ Royalties, paid to the owner of author rights



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Sale of Digital lands from the Arcona holdings via the auction system (sale of new digital lands)
P2P market for digital lands (sale and lease)
Framework for the sale of digital assets: digital land, software, system and user content.
Providing devkit licenses to software developers or 3D artists.
Uploading content into the system
Providing a toolkit to carry out various kinds of transaction for user creations: sales, gifts, issuing licenses for use, etc.
Server capacity
Tech support
Providing software to remotely position and manage AR content
AR Viewer
Providing users with guarantees of copyright for their creations
A service of recommendations for users based on traffic, ratings and community suggestions, choice of publisher.
Payment system (ERC20 token)
Internal messaging service
Various levels of access to tasks
Earning opportunities in exchange for performing various tasks for the system

System residents will be able to earn by creating and selling their own creations and leasing their land.

The arcona token is the internal currency of the Arcona ecosystem. Arconas can be exchanged for digital lands, other digital assets and various paid system services. Arconas can be also earned by carrying out tasks set by Arcona.

Arcona will have a limited emission of 100 million. As the system grows, the number of digital assets exclusively exchangeable for arconas will continuously increase. An increased system population will also result in rising prices for digital land. All these factors will result in the arcona becoming scarce, and therefore more valuable.

The token will already be put into internal circulation in the first quarter of 2018, and be used to pay residents who



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carry out various tasks for the system, as well as content creators.

6 HISTORY

Pilgrim XXI is an IT start-up operating in the tourism sector of the international augmented reality market since 2014. The company has created the first network of outdoor augmented reality parks: 8 parks in six countries with a total area of 7,770 ares. We have allowed tourists to combine real travel with time travel.

With just a regular smartphone, travellers can witness lost architectural wonders and historical events in real time and space. The service is mass market-oriented and adapted to all versions of inexpensive AR headsets.

Working on this project has put our team against a number of technological challenges, in particular in terms of the geographical positioning of augmented reality objects in real-world locations, as well as with tracking technologies and pattern recognition. We have had to go through all existing positioning technologies for augmented reality to discover that none of them suits our cause. No solution has allowed us to correctly position objects in a dynamic, changing, outdoor environment. We decided to create our own system for computer vision.

Another important factor that has directed our research was that 40% of our budget in creating our projects went on travel expenses to locations. Each project required our developers to travel 3 or 4 times to the location for mapping, testing and adjustment. At this point, we decided to focus on our system for remote positioning and management of augmented reality objects. We invested all our available funds into R&D.

As part of our work on the project, we have taken part in numerous conferences, exhibitions and other events. We have seen that there is a lot of interest in our ideas both among fellow professionals and potential users. Even without any special programming knowledge, each of them wanted to change the world around them with a simple set of actions. This led us to the idea of an ecosystem comprising all the tools and capabilities required for a broader audience to work daily in an augmented reality environment.

EXPERT ASSESSMENTS

Since the company was founded, it has passed several independent examinations on the following criteria:

1. The product, technology, and anticipated results of applied research have potential competitive advantages over global equivalents;
2. The product, technology, and anticipated results of applied research have a significant potential for commercialisation, as a minimum within Russia, and in the long term, globally;
3. The project is theoretically feasible and does not contradict the laws of science;
4. The project's team (key researchers, developers and project managers) have the knowledge and experience required to successfully bring the project to completion and conduct the required applied research;
5. The project team includes experts with international experience in research and development and experience commercialising their results.



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Evaluated by the St. Petersburg Pre-seed Investment Fund in 2013, resulting in an investment. Evaluated by Microsoft Seed Fund in 2014, and was provided with a grant.

In 2015, the company underwent a thorough, multi-level review from the international expert panel of the Skolkovo Innovation Centre in Russia. The panel included independent consultants, scientists and business people. As a result, Pilgrim XXI became a Skolkovo resident.



Microsoft Seed Fund grant, accelerations of Intel and Google, Skolkovo Foundation, top 20 startups by Booking Booster Programm assisted in our job

6.1 MEDIA COVERAGE

Complete list:

<https://www.arcona.io>

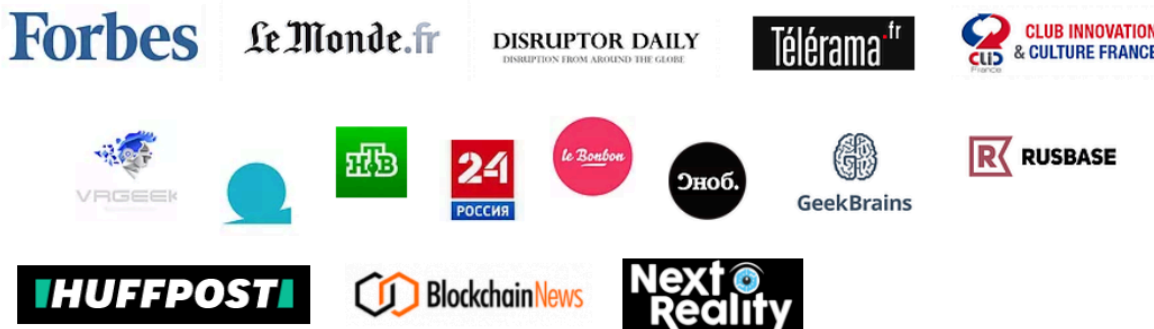
<http://www.pilgrimxxi.com/publity>

Video:

<https://www.arcona.io>

<http://www.pilgrimxxi.com/presskit>

<https://www.youtube.com/playlist?list=PLpUydsEP3blq8LQkeDRojGdjuYWjiPgmd>





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7. TEAM



Ilia Korguzalov



Diana Sorina



Aleks Zaulichnyy



Tania Chernikh



Nicolay Melnik



Daniel Girdea



Alex Emelianoiv



Igor Rozdestvensky

Ilia Korguzalov: CEO, Project Leader, Founder; Education: Degree in Economics; 9 years artist-restorer and heads experience at restoration laboratory of the Peter the Great Museum of Anthropology and Ethnography in Saint Petersburg, the Russian Academy of Sciences, 15+ years exp. in business development; Founder of a branding agency and travel magazine. Team role: project conceptualisation and management, design and market research. [LinkedIn](#)

Diana Sorina: CMO, Founder; Education: Degree in Economics; 12+ years exp. in marketing, branding, sales and PR. Co-Founder of travel magazine. Team role: marketing and sales. [LinkedIn](#)

Tatiana Chernih: Founder; Education: Journalism Degree; 12+years exp. journalism and PR. Team role: leading researcher, PR. [LinkedIn](#)

Daniel Girdea: Investor; 6+ years exp. working and investing in Real Estate & construction business. Project role: EU branch of the business development. [LinkedIn](#)

Nikolai Melnyk: Investor; 10+years exp. in advertising, sales/commercial, export managing. Project role: International branch of the business development. [LinkedIn](#)

Alexander Zaulichnyy: CTO; Education: Bachelor of Computer Science, ITMO University, Saint Petersburg, Russia. 5+ years of professional experience in: software architecture, development of AR and VR applications, mobile applications, games, A.I. for games, network engineering, development and managing of web-based applications, databases, team management.



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Aleksandr Emilianov: R&D Team lead; Education: Computer Science and Engineering (Ph.D): University of West Bohemia, Plzen, Czech Republic. Lomonosov Moscow State University. Russia. 20+ years exp. in: algorithm and software developer, Computer vision)

Shabetnik Ivan: Developer; Education: Saint Petersburg State University of Aerospace Instrumentation, Business Informatics. 5+ years in mobile development.

Vladimir Stishkin, Head of CG dep, 7+ years experience in CGI, motion design, animation, visualization.

Barynina Evgeniya: PR manager; Education: PR in commercial structures, Russian Academy of national economy and public administration; 5+ years exp. in marketing, sales and PR.

Yana Savinych. Education: studied painting and sculpture at the Novosibirsk State Pedagogical University, Ph.D. student in Archaeology and Oriental Studies at the Institute of Archaeology and Ethnography. Over 7 years experience in game design as a 2D and 3D artist and designer.

Igor Rozhdestvensky: Mentor; Education: PhD in Physics, Theoretical & mathematical; IT and Entrepreneurship 20+ years exp. [LinkedIn](#)

8 ADVISORS



Lyubov Simonova



Kairat Kaliev



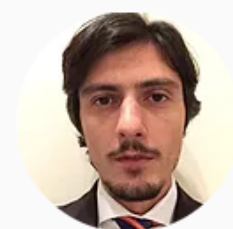
George Popescu



James Haft



Sergey Khitrov



Sergei Chmel



Alexey Strogov



Mihail Afremov

George Popescu

CEO and co-founder of Lampix, an AR technology platform. Founder and EdICor in Chief of Lending Times, a media company in the peer-to-peer, market place and online lending space. Chairman of the Board of advisors of Gatecoin, a blockchain asset exchange and an advisor to FirstBlood, a blockchain based eSports platform.

[LinkedIn](#)



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James Haft

Entrepreneur and Merchant Banker with broad experience in all aspects of forming, managing, advising, fund raising, and biz dev for entrepreneur-powered businesses, including, business strategy and M&A. Advisor or co-founder of global ICOs and Token offerings. Significant and relevant experience with Internet apps and platforms, Cryptocurrencies & Tokens.

[LinkedIn](#)

Lyubov Simonova

Business lady and business angel specializing in venture capital, business strategy and development, and internet technologies. Has over 20 years experience organizing technological projects for the internet, plus 10 years in the venture industry.

In August 2016, Lyubov became investment manager of the seed fund RVC. Before November 2010, she was a leading expert at Almaz Capital Partners (a Russian-American venture capital fund), and was head of the company's internet department for Russia and the CIS.

Before starting at Almaz, she was the head of strategy and business development at the investment company Finam, and a project manager at eHouse Holding where she was involved in developing an internet advertisement system, among other projects.

Lyubov is considered one of the leading business women in the Russian internet and digital media industry. In 2012, she was ranked as one of Russia's top 10 most influential women in IT. Has been listed as one of Russia's top 5 women in VC since 2014.

[LinkedIn](#)

Kairat Kaliyev

Founder of Cross Coin, the company which organized the successful ICO campaign Starta ICO, raising USD 5 million. His current focus is FinTech, a line of business at the Astana International Financial Centre, where he specializes in project development.

[LinkedIn](#)

Sergey Khitrov

Mentor and blockchain expert. Head of the Adwad Group, the CPA company Adwad.ru, advertising agency JetMedia.pro, organizer of CPALife and Blockchain Life and a number of other projects.

[LinkedIn](#)

Alexey Strogov

Head of R&D, software development, system integration and business development in the fields of IT, Internet and telecommunications for companies such as Siemens, T-Systems and DataArt.

[LinkedIn](#)

Mihail Afremov

Expert on the management, strategic development and protection of assets in real estate, as well as specialist in attracting investment in real sectors of the economy. He is a co-owner of several production and construction companies.

Sergei Chmel

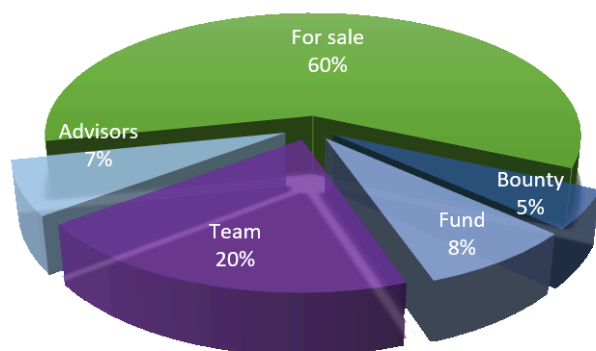


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Working with startups since 1999 both as an Investment and business development consultant and as an entrepreneur established several companies in different areas. Was involved in gaming, mobile payments, micro lending, nano materials projects as well as valuation and M&A deals. Currently advisor in ICORATING Rating Agency and Managing Partner at ICOSHARK Hedge Fund.

[LinkedIn](#)

9 ICO CONDITIONS



Emission: 100, 000, 000 tokens

Token name: arcona (arcona)

Fundraising stops after reaching the sum equivalent to USD 35 million.

60 million tokens will be offered for sale.

Tokens not sold during the ICO will be transferred to the payment fund for residents who carry out tasks in terms of developing software and content and testing the system's functions.

The minimal collection volume is a sum equivalent to USD 500,000.

Distribution of tokens:

20% team (Vesting: 5% for 6 month, 5% for 12 month and 10% for 18 month after the ICO is finished),

7% advisers (Vesting: 3.5% for 6 month and 3.5% for 12 month after the ICO is finished),

5% bounty,

60% will go to the market

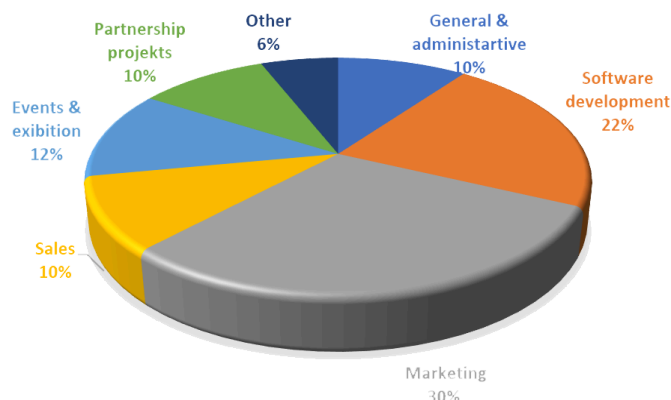
8% reserve fund

Tokens in the reserve fund are used for community development and to attract new users. Distribution will be carried out in the following areas:

- to support content creators and developers involved in the development of the ecosystem.
- to reward users for performing Arcona tasks, such as field testings.
- an bonus incentive for the first system users to register.

The spending of tokens from the reserve fund will be under strict community control and will be carried out according to the Road Map.

Allocation of funds:





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9.1 WHY BUY ARCONA TOKENS

The token will already enter into circulation within the system in the first quarter of 2018. The value of arcona tokens will grow as the project develops, as a result of new technological solutions, the expanding ecosystem, the growing number of participants, and the quantity and quality of the projects delivered on the platform. The growing number of digital assets exchangeable exclusively for arconas will result in the arcona becoming scarce, and therefore more valuable.



Right of choice over digital land plot

Only during the ICO, token-holders will be granted the right to reserve the digital land plots of their choice in the central districts of ten of the world largest cities with a potentially high active user flow.

Up until June 1, 2018, token-holders will be able to exchange their tokens for any digital land plot they chose at a rate of 100 arconas tokens per are (100 arconas tokens = 1 are).⁸

After the Arcona platform is launched, the price of Digital land will start to grow as a result of auctions for new terrICOrY and the emergence of a secondary market for reserved land plots

Right to participate in the creation of the Arcona ecosystem

All token-holders will have the right to contribute to the formation of the ecosystem. They will be offered the opportunity to complete tasks, developing software blocks and content, and testing the system in exchange for remuneration. Copyrights and the right to the commercial use of intellectual property will be protected with smart contracts.

Arcona token holders will also be able to participate in any promotions and loyalty programmes held by the ecosystem.

9.2 CONDITIONS FOR PARTICIPATION IN PRIVATE PRE-ICO

PRIVATE PRE-ITO
(Closed)
Received 650K USD
from private investors
and business angels



Private Pre-ICO: 8-31 August 2017.
Exclusive conditions may be provided upon request.
Telegram: @Korguzalow,
WhatsApp (Russian): +972 54 280 0334
WhatsApp (English): +34 661 849 960

9.3 CONDITIONS FOR PARTICIPATION IN PRE-ICO

Pre-ICO: September 2017

1. Free choice of city from a list of land plots which will be first to enter circulation when purchasing at least 25,000 tokens.

⁸ 10% of each sold lot remains to the Arcona system for placing navigation blocks, system content, debugging and testing the system.



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2. Opportunity to buy land with a 30% discount for two years after project launch.

9.4 CONDITIONS FOR PARTICIPATION IN ICO

ICO: November 2017.

Token-holders will be given a choice of 10 cities. After the ICO, digital land plots will be assigned randomly.

A draw among 5 participants of the first 5 days - travel to St. Petersburg for Christmas and meet the team.

Information on listing in stock exchanges and the terms of listing will be announced later.

10 DEVELOPMENT ROADMAP

11 2018:

12 Quarter 1

We will launch a marketplace within the first quarter after ICO with the primary goal of introducing arcona tokens as the system currency.

Initial content in the marketplace will be focused on involving independent developers and content-creators, promoting and providing legal support to the system, and other tasks to help speed up its development..

The initial content on the marketplace will include the following:

Task packages: special containers with Arcona tasks for developers, 3D artists, lawyers, copywriters, musicians, animators, marketing and PR experts, and other professionals willing to contribute to the project and earn money from our system.

Development kit: open source library-based tools for developers and 3D artists designed to create personal assets* for Arcona users.

Original assets: independent solutions created using Arcona DevKit or indie projects to be distributed within the Arcona ecosystem.

Arcona Digital land: Arcona land plots offered for pre-sale.

Quarter 2

Launch of AR Viewer prototype in the form of an app for testers and scouts to motivate users to use the software and earn tokens. Testers will take photos of spatial markers using their devices and send those photos to Arcona. All they will need to do is go for a walk and perform some simple tasks with AR Viewer turned on. Users will be able to earn arcona tokens by simply using the software installed on their mobile devices.

Partner project launches. While we were preparing for our ICO, we were joined by some new partners. The projects they have created integrate perfectly into Arcona's global concept. They will include loyalty programmes



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and projects to develop educational and charity initiatives. A partner gaming project with the working title Secret Project will be among those launched.

Quarter 3

Launch of the technological prototype for AR Grid; testing of remote positioning tools.

Quarter 4

Launch of AR Viewer beta version with basic functionality. Placing basic content in test locations.

2019

The AR Grid positioning system will be introduced in 10 of the planet's largest cities. A total of 1,500 km² of Digital land will be up for sale.

List of cities:⁹

1. Barcelona. The Gothic Quarter. The centre of the old city of Barcelona. Area: 1.4 km². Population of Barcelona: 1.6 million. VisICOrs: about 4 million tourists every year.
2. London. The City of London. Not just a city district, but a whole city-state. Area: 2.9 km². Population of London: 8.5 million. London is visited annually by around 19 million people.
3. Mexico City. The historical centre of Mexico City, stretching from Constitution Square (Zócalo) to Alameda Central park. On the site of an ancient Aztec settlement. Area: 1 km². Population of Mexico City: 20.3 million. Foreign tourists: 5.2 million per annum.
4. New York. SoHo. A historical neighbourhood in Lower Manhattan known for being a fashionable, youthful area of the city. Area: 1.14 km². Population of New York: 8.4 million. VisICOrs: 12.75 million a year.
5. Paris. 1st arrondissement. The oldest, most famous and elite district of Paris, and the centre of the city's tourist scene and commercial life. Area: 1.83 km². Population of Paris: 2.2 million. VisICOrs: 18.03 million a year.
6. Beijing. The Forbidden City. The largest and most famous palace complex and the most visited museum in the world. Area: 1 km². Population of Beijing: 21.5 million. VisICOrs: over 14 million a year.
7. St. Petersburg. Central district around Palace Square. This is the most popular part of the city for tourists and a UNESCO heritage site. Area: 2 km². Population of St. Petersburg: 5 million. VisICOrs: 6.9 million per year.
8. Rome. The districts of Celio and Campitelli. Located on one of Rome's seven hills, this is the oldest part of the city, and where the most famous attractions are located. Area: 1.4 km². Population of Rome: 2.9 million. VisICOrs: 7.1 million a year.

⁹ [github: arcona - list of pilot districts](#)



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9. Istanbul. Sultanahmet district in the old European part of Istanbul. On a promontory between the Golden Horn, Bosphorus and Sea of Marmara, today this is the most popular place for tourists in Turkey. Area: 1.5 km². Population of Istanbul: 14.8 million. VisICOrs: 7.1 million a year.

10. Tokyo. Asakusa District. One of the country's main tourist sites. Area: 1.5 km². Population of Tokyo: 13.4 million. VisICOrs: 13 million a year.

2020

The amount of georeferenced AR territory will increase to 40,000 km² and the Worldwide Augmented Reality Grid will be created.

12.1 TRACTION, REVENUE, MILESTONES

The Arcona AR ecosystem is being developed by the professional team at [Pilgrim XXI](#). **We have 5 years of experience in developing AR solutions and Arcona is the natural extension of our passion and experience in AR.**

PilgrimXXI has been working on the AR development market since 2013, enhancing the experience of tourists, bringing them the opportunity of time travel, to see how different historical places and events looked like in bygone eras. In 2014, we launched the world's first outdoor augmented reality park.

There are now 8 augmented reality parks operating in 6 European countries.

Since 2015, we have been making extensive investments out of own funds into researching distributed GIS, augmented reality technologies, 3D simulation, computer vision and artificial intelligence.

The Prototype is Ready!

▲ 2014: Received a pre-seed stage investment from the St. Petersburg Pre-seed Investment Fund in the amount of USD 170K. Received a grant from the Microsoft Seed Fund. Underwent accelerator programmes from Intel, Google and Faber Novel.

Launched the world's first open-air AR park, Ludza Castle (200 ares), which brought over 60,000 tourists in its first year, increasing tourist flows in the region by 30%.

Launched the Cruiser Aurora AR Park (St. Petersburg, Russia; 2000 ares).

▲ 2015: Pilgrim XXI became a resident of the Skolkovo Innovation Centre.

The project was voted one of the world's top 10 start-ups at Future en Seine (Paris, France). Work started on our own computer vision system.

Launched the Altun Estate AR Park (Pskov, Russia; 1000 ares).

Launched the Fortress of Bastille AR Park (Paris, France; 100 ares),

Launched the Forum of Pompeii AR Park (Pompeii, Italy; 400 ares).

▲ 2016: withdrew from the Pre-Seed Investment Fund by selling shares to the Spanish investor The Next Big Wow, S.L. Started developing augmented reality platform for mobile devices for the remote positioning of 3D content.

Launched the Road of Life AR Park (St. Petersburg, Russia; 500 ares).



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Launched the Old Nessebar AR Park (Nessebar, Bulgaria; 2500 ares).

▲ 2017: Launched the Battle of Narva AR Park (Narva, Estonia; 1000 ares).

There are now 8 augmented reality parks operating in 6 European countries. The company's revenue is USD 700K.

▲ 2018 Q1: Launch of marketplace and the arcona unit of account, sale of development kit

▲ 2018 Q2: Launch of AR Viewer prototype and applications with bonuses for testers and scouts.

▲ 2018 Q3: Launch of the technological prototype for AR Grid; launch of remote positioning tools for mobile platforms.

▲ 2018 Q4: Launch of AR Viewer beta version.

▲ 2019: The AR Grid positioning system will be introduced in 10 of the planet's largest cities. A total of 1,500 km² of Digital land will be up for sale. The internal economy will be launched.

▲ 2020: The amount of georeferenced AR terrICOrY will increase to 40,000 km² and the Worldwide Augmented Reality Grid will be created.

▲ 2023: The amount of georeferenced AR terrICOrY will reach 100,000 km², combining the physical and virtual worlds into a single augmented reality environment. The large-scale ecosystem the company creates will become an industry standard.