WIRE – WRC – ERC223

Decentralized Customizable Mapping Service

09-09-2017

Tokensale – Whitepaper
Symbol: WRC – Token: Wire
Powered by Wire-x
Wire-x.org

Version 2.8

Wire: Connect The Dots

Table of content:

Introduction:

Wire-x is on the break of launching het Wire token WRC. The token release is to enable the decentralization of the mapping process in general and offers the public the ability to use our custumizable decentralized mapping systems and a huge variaty of possibilities on our open source network. Including high resolution mapping from the latest military grade satellite imagery up to 2-5cm accuracy and encrypted quantum proof GPS connectivity.

Made possible through combining the Ethereum blockchain with complex algorithms, services such as navigation, geocoding, marking areas and highlight potential places of interest based on your preferences will be usable with great ease and anonymity.

From testnet version 0.2.3 users will be able to use location based services interconnecting with blockchain technology. The update will also improve scalability, resolutions, and enable advanced emergency capabilities; such as intergrated beacon, multilingual distress protocol algorythm.

Smart contract will enable users to jointly identify local goals and improvements for public interest, infrastructure and general enviroment. E.g. connect with your local neighborhood and gather funds to fix road issues or new structures. Joint funding for these projects will enabled through the smart contracts on the Ethereum network.

Earn WRC by contributing to our maps:

- Add info on landmarks, event schedules, historic sights, POI etc.
- Become a local admin (based on radius of home location) and earn WRC by approving new contributions.

More features are in development.

Lets take back our freedom, let us service you in the field of mapping.
Decentral, Anonymous, Open source, Fair and Free – WIRE-X – WRC

The Ethereum Blockchain:

We have chosen to use the Ethereum Blockchain, the structure of the ethereum blockchain is very similar to bitcoin's, the blockchain shared records of the entire transaction history, secured by copying this on every node in the network.

The difference with the ethereum blockchain is that it stores the most recent state of each smart contract in addition to all the ether transactions.

For each ethereum application, the network needs to keep track of the 'state', or the current information of all of these applications, including each user's balance, all the smart contract code and where it's all stored.

Bitcoin uses unspent transaction outputs to track who has how much bitcoin.

While it sounds more complex, the idea is fairly simple. Every time a bitcoin transaction is made, the network 'breaks' the total amount as if it was paper money, issuing back bitcoins in a way that makes the data behave similarly to physical coins or change.

To make future transactions, the bitcoin network must add up all your pieces of change, which are classed as either 'spent' or 'unspent'.

Ethereum, on the other hand, uses accounts.

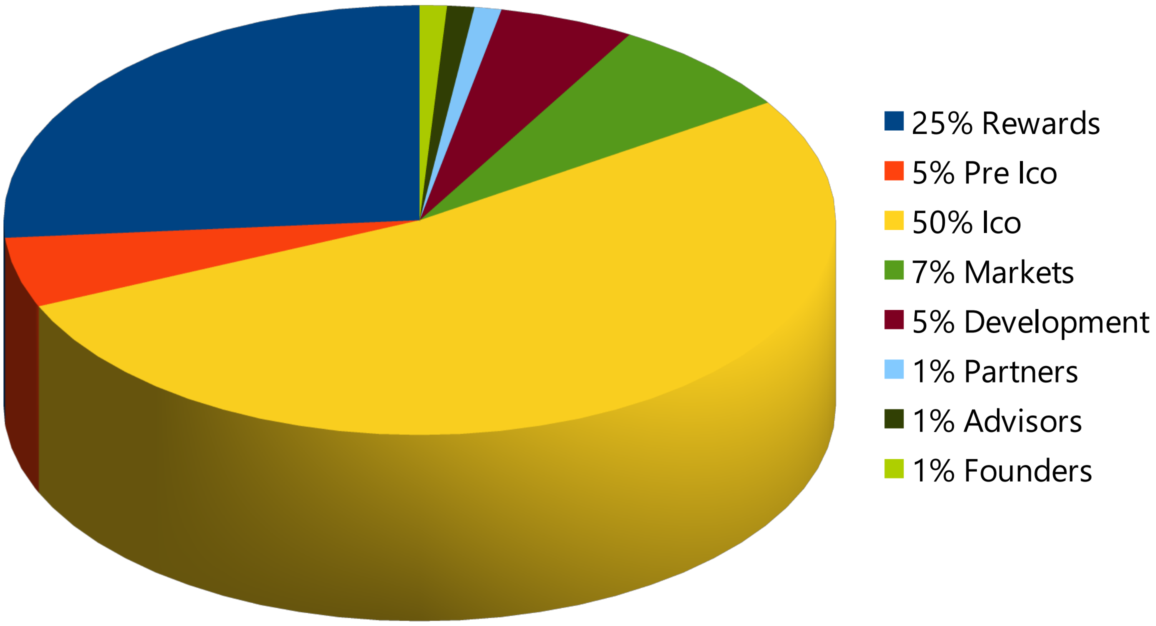
Like bank account funds, ether tokens appear in a wallet, and can be ported (so to speak) to another account. Funds are always somewhere, yet don’t have what you might call a continued relationship.

The reliable platform, smart contracts, solid development team and fast transactions made us choose for Ethereum.

Technical Specifications:

Token Name:	Wire
Token Symbol:	WRC
Token Standard:	ERC223
Token Platform:	Ethereum
Total Max Supply:	50.000.000
Decimals:	18
Early adoper sale:	5.000.000
ICO sale:	25.000.000

Token distribution:



Reward Program:

In order to keep the network of Wire up to date in the open source enviroment there is a need for a good reward program. To promote incentives of participants, the team of wire has reserved as much as 25% of the tokens (a total of 12.500.000) for the reward program. As soon as the network enviroment is adjusted to the open source network it is extremely important that participants are rewarded for their input to keep the network and data updated. The reward tokens are also usable for incentivising repairs or to form a majority to make decisions within a smart contract.

Earn WRC by contributing to our maps:

- Add info on landmarks, event schedules, repairs, damages, historic sights, POI etc.
- Become a local admin (based on radius of home location) and earn WRC by approving new contributions.

Technical background:

Important Note:
The highly skilled team of Wire-x is aware of the dangers of theft of our ideas, we have high ambitions, but are cautious about revealing our revolutionary technologies. This includes the GPS operation and the way we implement the emergency signal. As soon as we go open source more and more details will be disclosed, until that time we are required to keep some technical details private.

Elevation:
We focus on the world coverage Shuttle Radar Topography Mission XSAR data. And will be introducing more and more European and Asian data sets as well as good African and South American coverages. With the help of the Wire mapping communities, we will offer higher state by state and county by country data sets, and improve services.

The Shuttle Radar Topography Mission (SRTM) is an international research effort that obtained digital elevation models on a near-global scale from 56° S to 60° N, to generate the most complete high-resolution digital topographic database of Earth prior to the release of the ASTER GDEM. SRTM consisted of a specially modified radar system that flew on board the Space Shuttle Endeavour during the 11-day STS-99 mission in February 2000, based on the older Spaceborne Imaging Radar-C/X-band Synthetic Aperture Radar (SIR-C/X-SAR), previously used on the Shuttle in 1994. To acquire topographic (elevation) data, the SRTM payload was outfitted with two radar antennas.[2] One antenna was located in the Shuttle's payload bay, the other – a critical change from the SIR-C/X-SAR, allowing single-pass interferometry – on the end of a 60-meter (200-foot) mast that extended from the payload bay once the Shuttle was in space. The technique employed is known as Interferometric Synthetic Aperture Radar.

The elevation models are arranged into tiles, each covering one degree of latitude and one degree of longitude, named according to their south western corners. It follows that "n45e006" stretches from 45°N 6°E to 46°N 7°E and "s45w006" from 45°S 6°W to 44°S 5°W. The resolution of the cells of the source data is one arc second, but 1" (approx. 30 meter) data have only been released over United States territory; for the rest of the world, only three-arc-second (approx. 90-meter) data are available. Each one arc second tile has 3,601 rows, each consisting of 3,601 16 bit bigendian cells. The dimensions of the three-arc-second tiles are 1201 x 1201.

The elevation models derived from the SRTM data are used in our Geographic Information Systems. The Shuttle Radar Topography Mission is an international project spearheaded by the U.S. National Geospatial-Intelligence Agency (NGA) and the U.S. National Aeronautics and Space Administration (NASA).

DEM:
A digital map of the elevation of an area on the earth. The data sets are either collected by a private party or purchased from an organization such as the U.S. Geological Survey (USGS) that has already undertaken the exploration of the area. Digital elevation models are gray scale images wherein the pixel values are actually elevation numbers. The pixels are also coordinated to world space (longitude and latitude), and each pixel represents some variable amount of that space (foot, meter, mile, etc.) depending on the purpose of the model and land area involved.

DSM:
A Digital Surface Model (DSM) is an elevation model that includes the tops of buildings, trees, powerlines, and any other objects. Commonly this is seen as a canopy model and only 'sees' ground where there is nothing else overtop of it. A Digital Elevation Model (DEM) is a 'bare earth' elevation model, unmodified from its original data source (such as lidar, ifsar, or an autocorrelated photogrammetric surface) which is supposedly free of vegetation, buildings, and other 'non ground' objects. A Digital Terrain Model (DTM) is effectively a DEM that has been augmented by elements such as breaklines and observations other than the original data to correct for artifacts produced by using only the original data. This is often done by using photogrammetrically derived linework introduced into a DEM surface. An example is hydro-flattening commonly seen in elevation models done to FEMA specifications.

Hypsography:
Hypsography is the study of the distribution of elevations on the surface of the Earth, although the term is sometimes also applied to other rocky planets such as Mars or Venus. The term originates from the Greek word "hypsos" meaning height. Most often it is used only in reference to elevation of land but a complete description of Earth's solid surface requires a description of the seafloor as well. Related to the term hypsometry, the measurement of these elevations of a planet's solid surface are taken relative to mean datum, except for Earth which is taken relative to the sea level.

Radar:
The RADAR DEM Extraction process and algorithms allows us to create Digital Elevation Models (DEMs) from stereo RADAR data. Image correlation is used to extract matching pixels in two overlapping images and then use the sensor geometry from a computed math model to calculate x, y, and z positions. RADAR DEM extraction allows us to perform batch epipolar generation, batch the DEM extraction process, geocode DEMs, and create absolute or relative DEMs.

Lidar:
We obtain and process LIDAR data which are converted to dense point cloud data sets and obtained as a result of laser scanning, each point of the cloud has a specific X, Y, Z coordinates. LIDAR technology can be used to obtain wide spectrum photos. It is easy and quick to produce different practical products by processing these data with special software. The basis is a point cloud that is processed for producing digital terrain model, digital surface model and specific lines, land uses and intensity pictures often used for defining horizontal precision of LIDAR data. The main task of LIDAR system is to obtain 3D point measurements for production of digital terrain models and digital altitudinal models.

Stereo Paired:
The Stereo Pair 3D Measurement process allows you to select a common point from two stereo images and calculate an elevation value for that point.There are three steps in creating a DEM that are crucial to generating acceptable results: epipolar image creation, image matching, and DEM geocoding.

Epipolar Image Creation - The creation of epipolar images is an essential processing step in DEM extraction. Epipolar geometry describes the geometrical constraint between two frame images of a stereo pair. It represents the fact that a ground point and the two optical centers lie on the same plane. This means that for a given point in one image, its conjugate point in the other image must lie on a known line in the second image. By creating epipolar images, the search space for finding corresponding image points in automatic image matching is reduced. For information about building epipolar images for the use with DEM Extraction Wizard, see Building Epipolar Images.

Image Matching - Image matching finds the conjugate points on both the left and right images which correspond to the same ground feature. The output of the image matching procedure is called a parallax image, in which the x-coordinate difference (along epipolar lines) between the left and right image is stored and is used to build the DEM. Thus, the quality of image matching largely determines the quality of the output DEM.

DEM Geocoding - DEM geocoding re-projects the DEM from the epipolar projection to the user-specified output map projection and units. This step involves the filling of failed pixels and the resampling to a pixel spacing specified by the user. When GCPs are provided, the absolute orientation of the computed terrain model is performed in this step.

Tin:
A triangulated irregular network (TIN) is a digital data structure used in a geographic information system (GIS) for the representation of a surface. A TIN is a vector-based representation of the physical land surface or sea bottom, made up of irregularly distributed nodes and lines with three-dimensional coordinates (x, y, and z) that are arranged in a network of nonoverlapping triangles. TINs are often derived from the elevation data of a rasterized digital elevation model (DEM). An advantage of using a TIN over a raster DEM in mapping and analysis is that the points of a TIN are distributed variably based on an algorithm that determines which points are most necessary to an accurate representation of the terrain. Data input is therefore flexible and fewer points need to be stored than in a raster DEM, with regularly distributed points. A TIN may be less suited than a raster DEM for certain kinds of GIS applications, such as analysis of a surface's slope and aspect.

ESRI Shapefile:
The Esri Shapefile or simply a shapefile is a popular geospatial vector data format for geographic information systems software. It is developed and regulated by Esri as a (mostly) open specification for data interoperability among Esri and other software products. Shapefiles spatially describe geometries: points, polylines, and polygons. These, for example, could represent water wells, rivers, and lakes, respectively. Each item may also have attributes that describe the items, such as the name or temperature.

In Erdas virtual gis it is possible to extrude buildings when using 3d shape files. We create the 3D shapefile in Arc Gis basing the elevations off the surface we use in the visualization. We then add individual building heights to the shape file which will put the foot print in its correct elevation on the surface. This extrusion process will extrude the buildings into 3D. This process then includes all positive extrusions as a height field, extruding from the roof downwards.

Team:

Chris Jansen

Lead Developer/Founder

Technical project lead, agile consultant and software engineer. Chris has been a blockchain enthusiast from its early stages. His inspiring motivation and constant curiosity is the fuel of the WIRE-X team.

Tom Kuypers

CTO

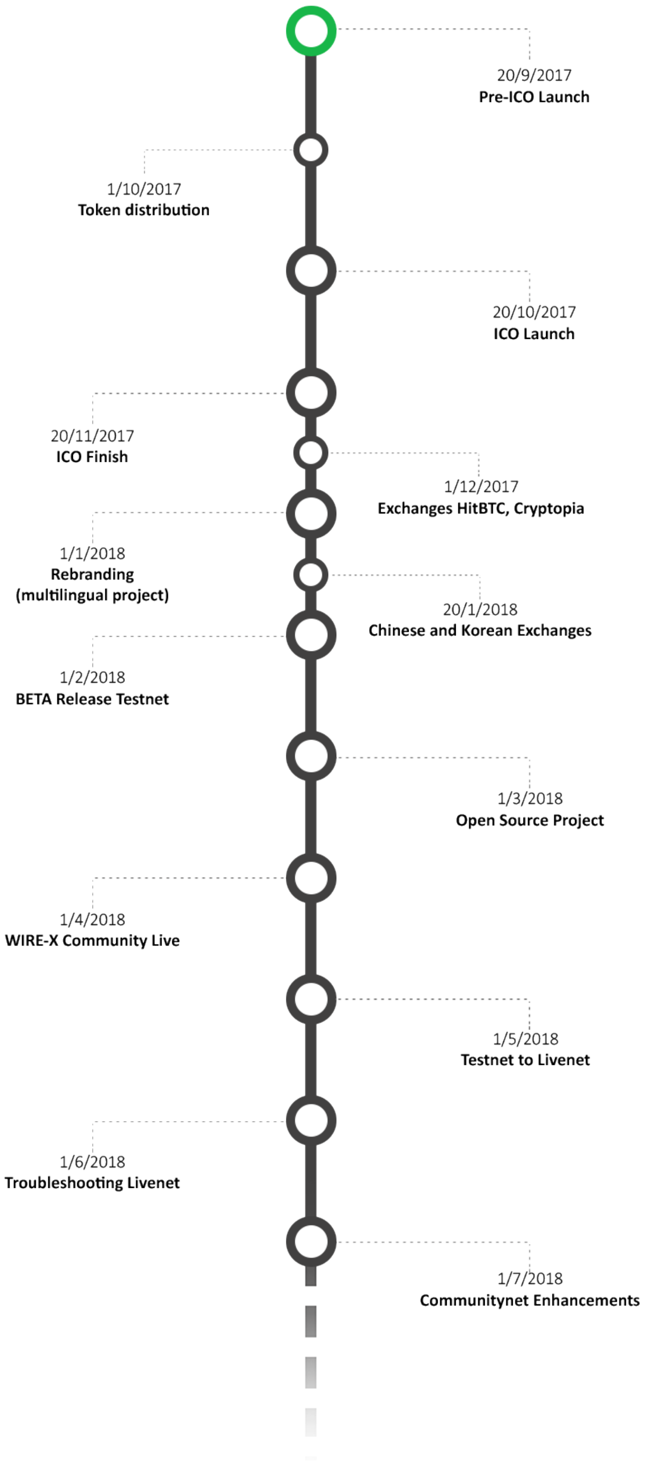
CTO and blockchain expert with a Master from University of Twente. Tom is a veteran engineer with more than 8 years of experience in software development, including high-loaded systems.

Jorg Mohnen

Advisor

With over 30 years as a professional software developer, Jorg's experience includes enterprise level client server applications, retail and government/military use mapping applications.

Roadmap:


20/9/2017
Pre-ICO Launch
1/10/2017
Token distribution
20/10/2017
ICO Launch
20/11/2017
ICO Finish
1/12/2017
Exchanges HitBTC, Cryptopia
1/1/2018
Rebranding
(multilingual project)
20/1/2018
Chinese and Korean Exchanges
1/2/2018
BETA Release Testnet
1/3/2018
Open Source Project
1/4/2018
WIRE-X Community Live
1/5/2018
Testnet to Livenet
1/6/2018
Troubleshooting Livenet
1/7/2018
Communitynet Enhancements

WIRE – WRC WHITEPAPER

Autors:
Chris Jansen
Tom Kuypers
2017