VAIOT

WHITEPAPER



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VAIOT

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# DISCLAIMER

# PLEASE READ THIS DISCLAIMER SECTION CAREFULLY.

# YOU SHOULD CONSULT YOUR OWN ADVISORS CONCERNING THE LEGAL, TAX, ECONOMIC, FINANCIAL AND OTHER ASPECTS ASSOCIATED WITH THE VAI TOKEN AND THE VAIOT PLATFORM

## DISCLAIMER

The VAI Token is classified as a Virtual Financial Asset in terms of the applicable Virtual Financial Assets Act. This Whitepaper has been prepared and registered with the MFSA in accordance with the Virtual Financial Assets Act. The VAI Token does not possess any of the necessary characteristics required to be considered as electronic money, a virtual token (as the term is defined in the VFA Act), transferable security, money market instrument, unit in collective investment schemes, commodity, security or any other form of a financial instrument as defined in the Markets in Financial Instruments Directive. Furthermore, this Whitepaper does not constitute a prospectus and does not constitute an offer of financial instruments and/or securities to the public or an offer in any way connected to a collective investment scheme.

Any decision to purchase VAI Tokens shall be based on consideration of this Whitepaper as a whole. The Issuer reserves the right to (i) make changes to this Whitepaper and any documents linked to the VAI Token and/or holding, and use of the VAI Token to ensure compliance with the applicable regulatory requirements, provided that such changes are carried out in line with applicable laws, and (ii) do all that is necessary to be in compliance with any regulatory requirements, including but not limited to, interrupting, suspending or ceasing the operations or trading of the VAI Token if deemed necessary at the Issuer's sole discretion, provided that any such measure shall be taken in accordance with applicable laws.

It is solely up to any person wishing to participate in this issue of VAI Tokens to ensure that no prior or subsequent approval, notification, registration or license is needed or if such is needed, it is solely up to such person to obtain such prior or subsequent approval, notification, registration or license of any form in the country where such person is a citizen, national, resident or having a similar connecting factor, or incorporated, registered or effectively managed, and the Issuer shall not in any way be liable for any non-conformity with any laws, rules or regulations by any such person.

The VAI Tokens are not available to (i) a natural person being a citizen, national, resident or having a similar connecting factor to; or (ii) a juridical person being incorporated, registered or effectively managed and controlled from or within a country, jurisdiction or territory where the placing, offering to the public, or the holding and use of the VAI Token and/or virtual currency or other tokens at any other moment in time is prohibited by laws, regulations or other practices and policies in the said country, jurisdiction or territory, which is taken to include, but is not limited to, the United States of America and any other of the Restricted Areas, or any other jurisdiction where the aforementioned is/are prohibited.

This Whitepaper, the VAI Tokens and/or the holding, use, and trading of the VAI Tokens carry no rights, whether express or implied, other than for their use on the VAIOT Platform and trading on DLT Exchanges following the VAI Token's admission to trading on such DLT Exchange or Exchanges. VAI



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Tokens do not represent or confer any ownership right or stake, share or security or equivalent rights, intellectual property rights, or any other form of participation relating to the Issuer. VAI Tokens do not give the holder thereof any entitlement to acquire any such interest or entitlement in respect of the Issuer. Furthermore, the Issuer shall not and shall be under no obligation to return or repay any investment made in virtue of this Whitepaper. The body of administrators of the Issuer, as identified in the Considerations section of this Whitepaper, are the persons responsible for the information contained in this Whitepaper.

This Whitepaper and the offering of VAI Tokens may not be taken as an implication: (i) that the information contained in this Whitepaper is accurate and complete subsequent to its date of issue; or (ii) that there has been no material adverse change in the financial position of the Issuer since such date; or (iii) that any other information supplied in connection with this Whitepaper is accurate at any time subsequent to the date on which it is supplied or, if different, the date indicated in the document containing same.

All advisors to the Issuer, including the VFA Agent to the extent allowed by applicable law, have acted and are acting exclusively for the Issuer in relation to this offering of VAI Tokens and have no contractual, fiduciary or other obligation or responsibility towards any other person, and will, accordingly, not be responsible to any Tokenholder or any other person whomsoever in relation to the transaction proposed in this Whitepaper, neither shall such advisors be responsible for the contents of, and any information contained in this Whitepaper, its completeness or accuracy or any other statement made in connection therewith.

This Whitepaper as well as all and any agreements, acceptances, and contracts resulting therefrom shall be governed by the laws of Malta, unless the contrary is expressly stated, and any person acquiring any VAI Tokens pursuant to this Whitepaper shall submit to the exclusive jurisdiction of the courts of Malta, without limiting in any manner the right of the Issuer to bring any action, suit or proceeding in any other competent jurisdiction, arising out of or in connection with any acquisition of VAI Tokens, or agreement, acceptance or contract resulting here from, or the Whitepaper as a whole.

Statements made in this Whitepaper are unless otherwise stated, based on the law and practice currently in force in Malta and are subject to changes therein.

To the best of the knowledge and belief of the administrators of the Issuer (who have all taken reasonable care to ensure such is the case), the information contained in this Whitepaper is in accordance with the facts and does not omit anything likely to affect the import of such information.

The administrators of the Issuer, Mr Krzysztof Surgowt and Mr Artur Szachno, accept responsibility accordingly.

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# GLOSSARY OF DEFINED TERMS

| | |
|---|---|
| **Artificial Intelligence or AI** | means simulation of intelligent behavior in computer systems, comprising of learning (acquisition of information and rules for using the information), reasoning (using rules to reach approximate or definite conclusions) and self-correction abilities and particular expert systems such as visual perception, speech recognition and translation between the languages |
| **AI Agent** | means an instance of a Machine Learning algorithm, merged with Blockchain |
| **Blockchain** | means a type of distributed ledger technology, comprised of unalterable, digitally recorded data in packages called blocks |
| **Distributed Ledger Technology or DLT** | means a database system in which information is recorded, consensually shared, and synchronized across a network of multiple nodes as further described in the First Schedule of the Innovative Technology Arrangements and Services Act, Chapter 592 of the laws of Malta |
| **DLT Asset** | shall have the same meaning as that attributed to it in the VFA Act |
| **DLT Exchange** | means any trading and/or exchange platform or facility, whether in Malta or in another jurisdiction, on which any form of DLT asset may be transacted in accordance with the rules of the platform or facility |
| **Experienced Investor** | means a Participant or prospective Participant who meets the requirements to be classified and/or treated as an Experienced Investor in accordance with Section VII.4 - TARGETED INVESTOR BASE |
| **ETH or Ether** | means the digital asset developed in virtue of the Ethereum Blockchain and referred to as "Ether" |
| **European Economic Area or EEA** | means all EU countries and also Iceland, Liechtenstein, and Norway |
| **FATF or GAFI** | refers to the Financial Action Task Force or Groupe d'Action Financière International |
| **Fiat currency** | means currency that represents legal tender issued by a sovereign country and is considered to be backed up by the central bank of its government |
| **IVFAO Hard Cap** | shall mean the set maximum amount of VAI Tokens to be allocated for sale during and for the purposes of the IVFAO in accordance with Section VI.4 - TOKEN ALLOCATION; provided that Participants are to be aware that a DLT Exchange, or other intermediary authorised to sell VAI Tokens by the Issuer, may mandate a lower hard cap according to its listing or token sale rules |
| **IVFAO Soft Cap** | shall mean the set minimum amount of VAI Tokens to be allocated for sale during and for the purposes of the IVFAO in accordance with Section VI.4 – TOKEN ALLOCATION, equivalent to two hundred and fifty thousand Euro in accordance with Section VII.2.4 – IVFAO SOFT CAP |

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| **Inexperienced Investor** | means any Participant or prospective Participant who does not meet any of the requirements to be classified as an Experienced Investor |
| **Initial Virtual Financial Asset Offering or Initial VFA Offering or IVFAO** | means the financing exercise carried out in virtue of this Whitepaper whereby a Virtual Financial Asset, being the VAI Token, is offered for sale to the public, whether such sale shall be undertaken directly by the Issuer or through one or more intermediaries, such as one or more DLT Exchanges and/or brokers. |
| **Intelligent Contracts** | refers to an innovative technological concept, developed by the Issuer, combining a set of technologies, both proprietary and utilizing third-party services/solutions |
| **Issuer, VAIOT or Company** | refers to VAIOT Limited, a company registered under the Laws of Malta bearing company registration number C89746 and having its registered address situated at Cornerstone Business Centre, Suite 1, Level 2, 16th September Square, Mosta MST 1180, Malta |
| **Maltese Financial Services Authority or MFSA** | refers to the Malta Financial Services Authority, established by virtue of the Malta Financial Services Act, Chapter 330 of the laws of Malta |
| **Markets in Financial Instruments Directive or MiFID** | refers to Directive 2014/65/EU of the European Parliament and of the Council 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU (recast) as may be amended from time to time |
| **Participant** | means a person or an entity participating in the Issuer's Initial Virtual Financial Asset Offering and has successfully completed all the necessary steps to become a Tokenholder |
| **Private Sale** | refers to any sale of VAI Tokens which is carried out by means of a private placement and which shall thus not form part of the IVFAO |
| **Restricted Areas** | means the USA, Puerto Rico, US Virgin Islands, Canada, China, Singapore, Afghanistan, Central African Republic, Cuba, Democratic Republic of the Congo, Eritrea, Iran, Iraq, Libya, North and South Korea, Somalia, South Sudan, Sudan, Yemen, Zambia, and Germany. The Website, VAIOT Platform, and VAI Tokens are not offered for use to natural and legal persons, having their permanent residence or their seat of incorporation in the above-mentioned countries |
| **Smart Contract** | means a form of technology arrangement being:<br>(a) a computer protocol; or<br>(b) an agreement concluded wholly or partly in an electronic form, which is automatable and enforceable by computer code, although some parts may require human input and control, or as better defined in the Innovative Technology Arrangements and Services Act, Chapter 592 of the laws of Malta |
| **Terms and Conditions** | refers to terms and conditions that may apply in connection with VAI Tokens which are obtained other than through the IVFAO; such terms and conditions may relate to the timing of obtaining same, use, circulation, and/or transferability of the said VAI Tokens, among other terms. Such terms and conditions may vary and the Issuer shall have |



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| | full discretion when negotiating such terms with third parties, and account may be taken of restrictions imposed by any DLT Exchange or other intermediary authorised to deal in VAI Tokens by the Issuer |
| **Tokenholder** | means a holder of VAI Tokens |
| **Token Sale Agreement** | means an agreement between the Issuer and a Participant or a private acquirer of VAI Tokens describing the terms of the token sale; therefore, a Token Sale Agreement can exist both within the private sale sphere as well as within the IVFAO environment |
| **Total Supply** | means the total supply of VAI Tokens which the Issuer intends to create being 400,000,000 VAI Tokens as further described in Section VI.4 – TOKEN ALLOCATION |
| **VAIBC** | refers to VAIOT's proprietary distributed network technology, where Artificial Intelligence and Blockchain are inseparably linked. |
| **VAI Token(s)** | means the DLT Asset developed by VAIOT and that is being offered in virtue of this Whitepaper |
| **VAIOT Platform** | means the platform that is being developed by VAIOT which is described in detail in this Whitepaper detailing an underlying, integrated business and technological concept and ecosystem combining Artificial Intelligence and Blockchain that includes Intelligent Contracts as a set of technologies, the VAI Token, and its economy as well as VAIOT business lines, solutions and products built on top of such set of technologies that allow for a specific market implementation |
| **VAIOT Project** | means the project carried forward by VAIOT for the purposes of developing, managing, and running of the VAIOT Platform, its products and services |
| **VAT** | refers to the value-added tax of relevant jurisdiction, if applicable |
| **VFA Agent** | refers to Grant Thornton Limited, a company registered under the laws of Malta having its registered address situated at Fort Business Centre, Level 2, Triq l-Intornjatur, Zone 1, Central Business District, Birkirkara CBD 1050, Malta, bearing company registration number C 80426, and registered as VFA Agent with the MFSA in terms of the VFA Act |
| **Virtual Financial Asset or VFA** | has the same meaning attributed to it in virtue of the VFA Act |
| **Virtual Financial Assets Act or VFA Act** | means the Malta Virtual Financial Assets Act, Chapter 590 of the laws of Malta |
| **Website** | refers to WWW.VAIOT.AI, including all subdomains and all their respective pages and services as well as the documents published therein |
| **Whitepaper** | shall means this electronic Whitepaper written by VAIOT, which describes the VAI Tokens and the VAIOT Platform, and which can be found on the Website. The Whitepaper has been drafted in compliance with the First Schedule of the Virtual Financial Assets Act |

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# ABBREVIATIONS

| | |
|---|---|
| **AI** | Artificial Intelligence |
| **AES** | Advanced Encryption Standard |
| **ADR** | Alternative Dispute Resolution |
| **CfR** | Commissioner for Revenue |
| **CRS** | Common Reporting Standard |
| **CAA** | Competent Authorities Agreement |
| **ECDSA** | Elliptic Curve Digital Signature Algorithm |
| **EdDSA** | Edwards-curve Digital Signature Algorithm |
| **TLS** | Transport Layer Security |
| **TIN** | Taxpayer identification number |
| **IT** | Information technology |
| **CFT** | Combating the financing of terrorism |
| **MFSA** | Malta Financial Services Authority |
| **ABCI** | Application Blockchain Interface |
| **IBC** | Inter-Blockchain Communication protocol |
| **cNN** | Convolutional Neural Networks |
| **GA** | Genetic algorithms |
| **DACH** | Deutschland (Germany), Austria, Confœderatio Helvetica (Switzerland) |
| **Ph.D.** | Doctor of Philosophy |
| **MBA** | Master of Business Administration |
| **Esq.** | Esquire |
| **GDPR** | General Data Protection Regulation |
| **PM** | Project Manager |
| **T&T** | Transition & Transformation |
| **DPO** | Data Protection Officer |
| **CEO** | Chief Executive Officer |
| **CPO** | Chief Project Officer |
| **CISO** | Chief Information Security Officer |
| **CISA** | Certified Information Systems Auditor |
| **ISACA** | Information Systems Audit and Control Association |
| **ECB** | European Central Bank |
| **EIB** | European Investment Bank |
| **SOF** | Special Operations Forces |
| **NCO** | Non- commissioned officer |
| **CEE** | Central and Eastern Europe |
| **ITC** | Information and communication technologies |
| **IMF** | International Monetary Fund |
| **TF-IDF** | TF – term frequency, IDF – inverse document frequency |
| **T** | Trillion |
| **M** | Million |
| **B** | Billion |
| **Q** | Quarter |
| **PR** | Public relations |
| **CAGR** | Compound annual growth rate |
| **IDC** | International Data Corporation |
| **GUI** | Graphical User Interface |
| **NUI** | Natural User Interface |
| **UI** | User Interface |
| **UX** | User Experience |
| **ERC** | Ethereum Request for Comments |
| **EIP** | Ethereum Improvement Proposal |

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| | |
|---|---|
| **SMS** | Short Message Service |
| **PC** | Personal Computer |
| **CPU** | Central Processing Unit |
| **FinTech** | Financial Technology |
| **LegalTech** | Legal Technology |
| **InsurTech** | Insurance Technology |
| **RegTech** | Regulatory Technology |
| **IC** | Intelligent Contract |
| **ICO** | Initial Coin Offering |
| **IVA** | Intelligent Virtual Assistant |
| **EUR** | euro |
| **USD** | United States dollar |
| **BTC** | Bitcoin |
| **ETH** | Ethereum |
| **DLT** | Distributed Ledger Technology |
| **PDF** | Portable Document Format |
| **AML** | Anti-Money-Laundering |
| **KYC** | Know-your-customer |
| **IPR** | Intellectual and Industrial Property Rights |
| **R&D** | Research and Development |
| **i.a.** | inter alia |
| **i.e.** | id est |
| **e.g.** | exempli gratia |
| **C2C** | Consumer to Consumer |
| **B2B** | Business to Business |
| **B2C** | Business to Consumer |
| **OCR** | Optical Character Recognition |
| **NLC** | Natural Language Classifier |
| **NLP** | Natural Language Processing |
| **NLU** | Natural Language Understanding |
| **NUI** | Natural User Interface |
| **MVP** | Minimum Viable Product |
| **PoS** | Proof of Stake |
| **PoW** | Proof of Work |
| **BFT** | Byzantine Fault Tolerance |
| **PLP** | Programming language processors |
| **SDK** | Software Development Kit |
| **SVM** | Support Vector Machines |
| **rPLP** | reverse Programming Language Processing |
| **VCGE** | VAIOT Code Generation Engine |
| **VVAS** | VAIOT Value Assurance System |
| **VAILawyer** | Virtual AI Legal Assistant |
| **VAIAssistant** | Virtual AI Sales Assistant |
| **VFA** | Virtual Financial Asset |
| **IVFAO** | Initial Virtual Financial Asset Offering |



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## THE WHITEPAPER

This document ("the Whitepaper") has been drafted by VAIOT LIMITED (the Issuer) for the offering of **VAI Tokens,** which qualify as Virtual Financial Assets ("**VFA**") under the Virtual Financial Assets Act ("**VFA Act**") of Malta.

The Whitepaper should be read in its entirety and considered as a whole before making any decision to acquire VAI Tokens. The offer of VAI Tokens does not constitute an offer or solicitation to sell financial instruments. If the Issuer decides to make any such offer or solicitation of financial instruments, it shall do so using a prospectus or other offering documentation in terms of any applicable Maltese law. The Whitepaper does not purport to be all-inclusive and does not necessarily contain all the information that the prospective Participants may desire in deciding whether or not to purchase the VAI Tokens. If prospective Participants are in any doubt about the contents of the Whitepaper, they should consult their financial or other professional advisers.

The information contained in the Whitepaper has been compiled from sources believed to be reliable, primarily from the management of the Issuer.

The persons responsible for the Whitepaper are the Directors of VAIOT LIMITED namely:

- Christoph Surgowt (Executive Director and CEO)
- Artur Szachno (Executive Director and CISO)

*Without prejudice to article 10 of the VFA Act, civil liability attaches to those persons who have tabled this Whitepaper and have applied for the registration of this Whitepaper, namely the Issuer. Thus, the Company is responsible for the information contained in the Whitepaper, and to the best of its knowledge, it has taken all reasonable care to ensure that the information contained herein is in accordance with the facts and does not omit anything likely to affect the importance of such information. Nevertheless, the Company expressly disclaims any and all liability based on such information, errors in such information, or omissions in such information that are not the result of willful intent or gross negligence. In connection with the offer made in the Whitepaper, no person is authorized to give any information or to make any representations other than those contained in the Whitepaper and/or the Website.*



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In the Whitepaper, the Issuer aims to show that AI and Blockchain, when put together, have the potential to revolutionize various business processes. On the following pages, the reader will find a description of VAIOT's proprietary solutions as well as other technologies used and adapted for the purpose of VAIOT's solutions development, including VAIOT's **Intelligent Contracts** (**IC**) as a set of technologies, both designed with, and utilizing, AI solutions (such as the **VAIBC Technology, IBM Watson** components, Microsoft's Luis, OpenAI's GPT-3, ChatGPT and GPT-4), as well as cryptographic mechanisms and Blockchain (**Polygon**) for increased security and efficiency. In this Whitepaper, the reader will find business descriptions, including the problems and challenges that VAIOT solutions aim to answer and the business use-cases covered by the VAIOT Platform, as well as the technical description of its components. Through this Whitepaper, the Issuer would like to demonstrate to the reader how Artificial Intelligence can use the general concept of digital, blockchain-based "**Smart Contracts**," in order to create "**Intelligent Contracts**." The goal is to create a true alliance of Blockchain and Artificial Intelligence and to bring it to daily use via the Virtual AI Assistant acting as an interface between the user and the technology. VAIOT and the IBM Corporation cooperate extensively on the said matter.

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The prospective Participants should not construe the contents of the Whitepaper as an investment, legal, business, accounting, tax, or other advice. In deciding to acquire VAI Tokens, the prospective Participants must rely on their examination of the Issuer and the terms of the offering, including the merits and risks involved. The prospective Participants should consult their attorneys, business advisors, and/or tax advisors as to legal, business, accounting, tax, and related matters concerning the acquisition of VAI Tokens.

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All references in this Whitepaper to "Malta" are to the "Republic of Malta."

Unless it appears otherwise from the context:

(a) words importing the singular shall include the plural and vice-versa;

(b) words importing the masculine gender shall include the feminine gender and vice-versa;

(c) the word "may" shall be construed as permissive and the word "shall" shall be construed as imperative;

(d) any reference to a person includes natural persons, firms, partnerships, companies, corporations, associations, organisations, governments, states, foundations or trusts;



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(e) any reference to a person includes that person's legal personal representatives, successors, and assignees;

(f) any phrase introduced by the terms "including," "include," "in particular" or any similar expression is illustrative only and does not limit the sense of the words preceding those terms;

(g) any reference to a law, legislative act, and/or other legislation shall mean that particular law, legislative act, and/or legislation as in force at the time of issue of this Whitepaper.

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# EXECUTIVE SUMMARY

## THE ISSUER & PROMOTERS

**VAIOT LIMITED** (i.e., **the Issuer** of the Virtual Financial Assets) is a private limited liability company incorporated under the laws of Malta on 6 December 2018 for an indefinite period of time ("**the Issuer**"). The Issuer was created to execute the VAIOT Project and to develop the underlying technology.

**VFA Agent**: Grant Thornton Limited

**Financial & Systems Auditor:** FACT Group (FACT Audit & FACT Technologies)

## VAIOT PLATFORM AND INTELLIGENT CONTRACTS

VAIOT has been created by industry leaders and experts with the mission of reshaping entire industries. Combining two pioneering technological trends, Blockchain and Artificial Intelligence (AI), VAIOT takes the lead in creating new ways of digitally accessing services and securely concluding legal agreements using a natural user interface. Furthermore, it acts as a broker and aggregator for various other products and services, enabling the opportunity of identifying several innovative solutions.

### A new quality in service distribution

VAIOT enables both businesses and consumers to utilize a set of technologies called Intelligent Contracts. It serves as a personal assistant, available on mobile devices via a simple natural user interface (e.g., voice conversation), providing:

- AI-based legal services, such as intelligently creating custom contracts (both printable, traditional written contracts, as well as digital versions, securely stored using Blockchain).
- A novel, intelligent service distribution channel that empowers businesses to adapt to modern customers by providing a new way of accessing services.

### The VAIOT Solution



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Think of VAIOT as uniquely combining the skills and knowledge of a lawyer, a Blockchain programmer, and a personal assistant. VAIOT utilizes multiple AI mechanisms, such as natural language processing, to create a new channel for delivering and accessing various services with vastly improved user experience.

## I. Virtual AI Legal Assistant

Combining Blockchain (and the concept of smart contracts), AI, and natural user interface, VAIOT will introduce its Virtual AI Legal Assistant to the market, focusing on law firms, businesses, and individual consumers.

- Effortless communication with technology via a natural user interface makes requesting and obtaining certain legal services, such as creating contracts, as easy as having a conversation.
- The user simply needs to answer a few questions and a contract is generated automatically, both in a traditional, written, ready-to-sign form and as a digital contract, based on Blockchain.
- No legal or technical knowledge is required.
- VAIOT utilizes a vast database comprising the legal codes and best practices specific to each supported region.
- Designed for both law professionals and everyday consumers.

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## II. AI-backed Digital Service Distribution Channel

As customers expect easier, quicker, and cheaper solutions, as well as new digital channels for buying services and conducting instant transactions, VAIOT offers the Virtual AI Assistant to meet those expectations.

- The personal assistant functionality with a natural user interface offers a new level of customer experience.
- Users can easily purchase products and services or communicate with the company digitally through an automated service distribution channel.
- The customer simply makes his request to the Virtual AI assistant and provides input data as requested – the technology takes care of the rest.



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- As an efficient and innovative channel for sales, marketing, and customer service, the Virtual AI Assistant simplifies business processes and reduces costs for both enterprises and consumers.
- Blockchain provides an additional level of security, protecting customer interests.

VAIOT will become indispensable for multiple industries. One can imagine clients opening an intuitive application where the Virtual AI Assistant, capable of understanding both speech and the written word, suggests a suitable product or service based on the customer's needs, quickly and effortlessly.

**VAIOT serves both businesses and consumers**

Below please find a summary of benefits offered to businesses and consumers.

I. General

- High availability (24/7/365) and easy access to services and distribution channels as well as almost immediate contract generation.
- Enhanced user experience due to the utilization of a personal assistant with a natural user interface.
- Advanced security thanks to Blockchain and cryptography.
- New data-gathering tools for enterprises.
- Higher speed and efficiency of both business and daily operations thanks to automatization and a natural user interface.

II. Virtual AI Legal Assistant

- Provides faster and more affordable legal services, instantly available to a wide customer base.
- Creates quality contracts (both printable and ready-to-sign, as well as highly secure Blockchain-based digital versions), replacing uncertain, risky contract templates and expensive, time-consuming legal services.
- Automates basic legal processes, reducing costs, increasing efficiency, and allowing legal professionals to focus on more advanced tasks.
- Allows for gradual digitization of contracts on the Blockchain, matching the pace of



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digital transformation in the legal sector and enhancing traditional, written contracts with additional security, transparency, and the introduction of execution rules.

III. AI-backed Digital Service Distribution Channel

- A brand new, AI-based digital channel for marketing, sales, distribution, and communication, enabling a whole new level of personalized customer service.
- Reduced operational costs for businesses thanks to process improvement and automation.
- The personal assistant supports the acquisition of goods and services tailored to the specific user, i.a. by suggesting the best offers.
- The recordation of transactions on the Blockchain allows for non-repudiation, greater transparency, and increased security.

**Intelligent Contracts**

VAIOT business solutions are built on top of Intelligent Contracts – a set of technologies, both proprietary and provided by third parties, integrated into the VAIOT Platform. Below please find a list of components of Intelligent Contracts.

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- VAIBC

VAIBC is VAIOT's proprietary distributed network technology, where Artificial Intelligence and Blockchain are inseparably linked. It introduces a modular structure, allowing for the deployment of AI algorithms on-chain and enabling them to participate in the consensus algorithm. It results in an enhancement of Blockchain use cases with the use of AI while keeping the properties of immutability and security of this technology. Artificial Intelligence obtains data from the Blockchain, which is necessary for further development of the algorithms. Blockchain guarantees that AI algorithms settled on-chain cannot be manipulated/modified without network participants reaching a consensus. It also allows for the synchronization of data between the distributed versions of AI algorithms. The combination of AI and Blockchain ensures that the whole structure is fraud-resistant on the consensus level as well. In VAIBC, where Artificial Intelligence can take part in the generation of digital contracts, Blockchain acts as a "supervisor," monitoring all of AI's decisions, ensuring correctness, and preventing external manipulation.



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- Virtual AI Assistant

The Virtual AI Assistant is a personal tool utilizing a natural user interface for the creation of Intelligent Contracts, as well as the acquisition of various products and services within the new digital service distribution channel.

It ensures a seamless experience, allowing the user to communicate with the VAIOT Platform in a natural way and to obtain goods and services more efficiently and affordably, with full data support and transparency. The assistant brings all the background processes together, as the Intelligent Contract is created in both human-readable (printable, ready-to-sign) and coded form.

- IBM Watson

IBM Watson is one of the most recognized business solutions, utilizing the latest innovations in machine learning to support automation and optimization of complex processes. Its powerful tools, together with VAIOT's proprietary algorithms, form most of the components of the platform, such as the Virtual AI Assistant or the VAIOT Code Generation Engine.

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- Polygon

Polygon is a protocol and a framework for building and connecting Ethereum-compatibile blockchain networks.

Its modular structure provides heavily tested and fully customizable components that firmly bootstrap VAIOT applications. Its features include ETH compatibility, scalability, modularity, sovereignty and interoperability.

With Polygon, a project can have its dedicated, optimized instance of Ethereum which combines the best features of stand-alone blockchains (sovereignty, scalability, and flexibility) and Ethereum (security, interoperability and developer experience). Additionally, these blockchains are compatibile with all the exisiting Ethereum tools (Metamask, MyCrypto, Remix, etc), and can exchange messages among themselves and with Ethereum.

- VAIOT Code Generation Engine (VCGE)

AI combined with the VAIOT Code Generation Engine (VCGE) allows for the automatic conversion of an abstract description into an executable program, based on Blockchain. A user-



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friendly application will allow consumers to input only the core elements of the contract. The AI will then identify the basic contract patterns and convert them into a clean and standardized Intelligent Contract. Certain aspects of the contract are coded, and whenever set conditions are met, the contract is executed, and an irreversible entry is made in the Blockchain ledger. The usage of AI models guarantees the highest level of security of Intelligent Contracts and excellent code performance.

## VAIOT'S BUSINESS MODEL

The VAIOT Platform will offer to the market business solutions focusing on two areas:

- AI-based legal services
- A novel, intelligent service distribution channel

The Issuer aims to enhance several industries, including, at first, insurance services, financial services, legal services, including computer-assisted legal research services and Consumer to Consumer (C2C) commercial contracts and transactions. The business model assumes that the solution offered by VAIOT will be both B2B (VAIOT offered as a solution enhancing service distribution, sales, and customer service processes for companies) as well as B2C (VAIOT offered as an open application for consumers to allow wider B2C and C2C transactions).

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VAIOT will initially focus on:

I. Insurtech

VAIOT will allow customers to buy a variety of services, including, for example, car or travel insurance. Thanks to the AI Virtual Assistant, VAIOT will be able to support purchase decisions and sales processes, creating a brand new service distribution channel.

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<u>Business lines:</u>

- Virtual AI Sale Assistant (VAIAssistant) – New, digital and intelligent sales channel
- Virtual AI Aggregator & Broker (Recommendation and Sales Assistant) - New, digital and intelligent customer service tool



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II. Legal Tech

The Virtual AI Legal Assistant will be offered to end-users in two different models – B2B and B2C. In the B2B model, the product will be offered to businesses that wish to benefit from technological support in their daily legal processes. Be it a law firm trying to cut costs and save the time of its employees, or a medium-sized company with a small, overloaded legal department, VAIOT's AI Legal Assistant will provide support in generating legal contracts based on its extensive database. In the B2C model, VAIOT will offer legal services to regular customers, allowing them to save money on lawyers and vastly simplifying the process of contract preparation.

Business line:

- Virtual AI Legal Assistant - new, digital, intelligent legal, and financial assistant with the capability to generate contracts and conclude secure transactions.

The Virtual AI Legal Assistant will be offered either in B2B or B2C models.

- B2B model – the product will be offered to businesses wishing to benefit from technological support in their daily legal processes.
- B2C model – VAIOT will offer legal services to individual customers.

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**VAIOT'S BLOCKCHAIN**

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The Issuer is developing its proprietary Blockchain based on the Polygon Edge and integrating with Polygon mainnet network for blockchain services and product development. The official launch of its Blockchain was announced in Q1 2023. The target, proprietary Blockchain solution, will be merged with Artificial Intelligence algorithms to create VAIBC technology.

For the first stage of VAIOT's development project and the Initial VFA Offering, the ERC-777 standard will be used to establish the first version of the VAI Token.



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At a later stage of the VAIOT project, VAI Tokens will be made available on Polygon mainnet while the ERC-based token will remain operational through the usage of the ETH-Polygon Bridge.

## TOKEN ECONOMY

The VAI Token is the digital currency of the VAIOT Platform, reflecting the network's value and crucial for the proper functioning of the underlying VAIBC technology.

VAI Tokens are used as:

- a settlement method for goods and services offered on the VAIOT Platform;
- payback bonus after a purchase is completed by the user in the intelligent service distribution channel;
- rewards for nodes securing the network.

For a detailed description of the token economy, please see Section VI - VAI TOKEN ECONOMY.

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## PROJECT ROADMAP

2017: The idea of VAIOT is born.

2018: The founding of VAIOT.

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H1 2019: VAIOT joins the world's first integrated framework for ICO regulation.

Q2 2019: Launch of the first, private round of funding for the VAIOT project.

H2 2019 – Q2 2020: VAIOT seeks to register its Whitepaper in accordance with the VFA Act.

Q4 2019: VAIOT-IBM project launched.

Q2/Q3 2020: Private phase of the sale of VAI Tokens; VAIOT's Whitepaper is registered with MFSA.



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Q3 2020: VAIOT's Initial VFA Offering is launched once MFSA approves the Whitepaper.

Q3 2020: VAIOT application MVP to be presented.

H2 2020: Extending the Intelligent Contracts database and working on the launch of the Virtual AI Sale Assistant.

Q2 2021: Virtual AI Sale Assistant to be presented.

Q3 2021: Virtual AI Insurance Aggregator & Broker to be presented.

Q3 2022: Virtual AI Legal Assistant for Consumers – Easy Contracts Assistant v1

Q1 2023: Polygon Mainnet Launch

Q4 2023: Intelligent Contracts Interoperability

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**INITIAL VFA OFFERING**

**The previous round of funding**

The Issuer has decided to pursue an IVFAO from Malta, thereby registering the Whitepaper with MFSA in order to continue raising finance with the aim of reaching its goals, as further outlined in this Whitepaper.

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In 2020 the Issuer received undertakings from private investors for an amount of 3,5 M EUR in a private pre-sale of VAI Tokens, thereby allocating 8,75% of the Total Supply of VAIOT's VAI Tokens to such private investors.

**Reasons behind the initial VFA offering**

VAIOT is launching the IVFAO with the ultimate aim of raising finance to:

- Continue developing the VAIOT Platform and its underlying technology; funds will be used for R&D, software and product development, human resources, acquisition of the



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necessary hardware and software, market research, product maintenance, and similar expenses and costs related to the development of the VAIOT Platform and its underlying technology;

- Cover expenses related to marketing and sales of VAIOT's products, as well as expenses related to public relations;
- Cover other operational expenses and costs as the business may face from time to time.

Other reasons behind the Initial VFA Offering are as follows:

- To ensure that the VAI Token circulating within the offered DLT-based solution is exchangeable and accessible to a wide audience on one or more DLT Exchanges to ensure availability of VAIOT services to the users;
- To ensure full transparency and compliance with Maltese regulations to protect investors' interests and well-being;
- Admitting to trading of the VAI Token on one or more DLT Exchanges to facilitate secondary market trading of the VAI Token.

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**Initial VFA Offering structure**

1. Private sale (private placements)
2. IVFAO

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**Total number of VAI Tokens to be issued (maximum circulating supply)**

Phase 1 (ERC-777) – maximum circulating supply: 312,000,000 (three hundred twelve million)

Phase 2 (after migration to proprietary Blockchain solution based on Polygon) – maximum circulating supply: 400,000,000 (four hundred million)

**IVFAO Soft Cap**



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The Issuer has established a Soft Cap for this IVFAO of 2,500,000 VAI Tokens, equivalent to 250 000 EUR (two hundred and fifty thousand euro). The Issuer shall provide an undertaking to source alternative funding in order to meet its minimum working capital requirements to continue to finance the Issuer's business growth in the event that the funds raised by means of the IVFAO and Private Sale are not sufficient to meet such minimum working capital requirements.

The Issuer undertakes to refund the issuing value of the VAI Token paid on subscription by the Participants in the event that the IVFAO Soft Cap is not reached by the end of the Initial VFA Offering. Once the IVFAO Soft Cap is reached, and notwithstanding the fact that the subscription period of the IVFAO may not have expired yet, the Issuer shall be free to start utilizing the proceeds collected from the sale of VAI Tokens through the IVFAO.

**IVFAO Hard Cap**

The Issuer has established the IVFAO Hard Cap set as a maximum amount of VAI Tokens to be allocated for sale during and for the purposes of the IVFAO in accordance with Section VI.4 - TOKEN ALLOCATION. The summary of the allocation can also be found in the EXECUTIVE SUMMARY. In terms of the said Section VI.4 – TOKEN ALLOCATION, the IVFAO Hard Cap is 2% of the Total Supply. Prospective Participants who wish to acquire VAI Tokens through the services of an intermediary, such as a DLT Exchange, should also take into account that a lower hard cap on VAI Tokens may apply when acquiring through such intermediary.

Please note that the IVFAO Hard Cap does not contain VAI Tokens sold in the Private Sale.

**VAI Token price:** 0.1 EUR (ten eurocents)

**Life-cycle of the Initial VFA Offering**

Q2/Q3 2020 – submission of application for registration of the Whitepaper and the Private Sale of VAI Tokens

H2 2020 – Commencement of Initial VFA Offering and listing on a DLT Exchange



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**Methods of payment**

Fiat money (EUR, USD), BTC, ETH, and in case of acquiring VAI Tokens through the services of an intermediary authorized for such purpose by the Issuer, any other currencies, whether virtual or otherwise, accepted by such intermediary.

**The public sale of VAI Tokens**

The Company has conducted a public sale of VAI Tokens in the form of an IVFAO.

**Geographical restrictions**

The VAIOT Website, including the mechanisms used for IVFAO and VAI Tokens, are not offered for use to natural and legal persons having their permanent residence or their seat of incorporation in the following countries: Germany, USA, Puerto Rico, US Virgin Islands, Canada, China, Singapore, Afghanistan, Central African Republic, Cuba, Democratic Republic of the Congo, Eritrea, Iran, Iraq, Libya, North and South Korea, Somalia, South Sudan, Sudan, Yemen, Zambia (Restricted Areas).

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**Experienced Investors**

VAIOT shall treat a Participant as an Experienced Investor if such Participant declares that:

- they have already participated in other offerings of VFAs;
- they have invested in VFAs over 10,000 EUR or its equivalent; and
- they possess the necessary experience, knowledge, and expertise to make their own investment decisions and properly assess the risks involved

VAIOT shall also treat the following as Experienced Investors :

- entities which are required to be authorized or regulated to operate in the financial markets;
- large undertakings meeting two of the following size requirements on a company basis:



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- balance sheet total: 20,000,000 EUR,
- net turnover: 40,000,000 EUR,
- own funds: 2,000,000 EUR;

- national and regional governments, public bodies that manage public debt, Central Banks, international and supranational institutions such as the World Bank, the IMF, the ECB, the EIB and other similar international organizations;
- other institutional investors whose main activity is to invest in VFAs, including entities dedicated to the securitization of assets or other financing transactions.

Furthermore, VAIOT shall treat a Participant as an Experienced Investor if all of the following are satisfied:

- the Issuer will undertake an adequate assessment of the expertise, experience and knowledge of the Participant, and this assessment gives reasonable assurance, in the light of the nature of the transactions or services envisaged, that the Participant is capable of making their own investment decisions and of understanding the risks;
- in the course of the assessment referred to in the point above, as a minimum, two of the following criteria shall be satisfied:
  - the Participant has carried out transactions, in significant size, on the relevant market at an average frequency of 10 per quarter of the previous four quarters,
  - the size of the Participant's Virtual Financial Asset portfolio, defined as including cash deposits and Virtual Financial Assets, exceeds 500,000 EUR or its currency equivalent,
  - the Participant works or has worked in a position, which requires knowledge of the transactions envisaged,
  - the Participant has worked in the financial sector for at least one year in a professional position;
- the following procedure is followed:
  - the Participant shall state in writing to the Issuer that they wish to be treated as an Experienced Investor,
  - the Issuer will give such Participant a clear written warning of the protections and investor compensation rights they may lose, and
  - the Participant will state in writing in a separate document from the contract,


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that they are aware of the consequences of losing such protections.

## Funds Allocation

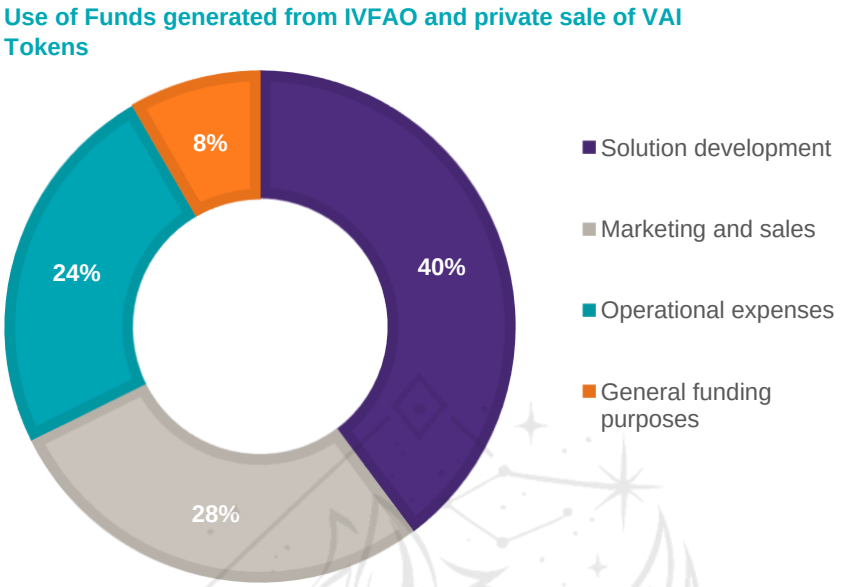



*Figure 1: Use of Funds generated from IVFAO and private sale of VAI Tokens*

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## Token allocation

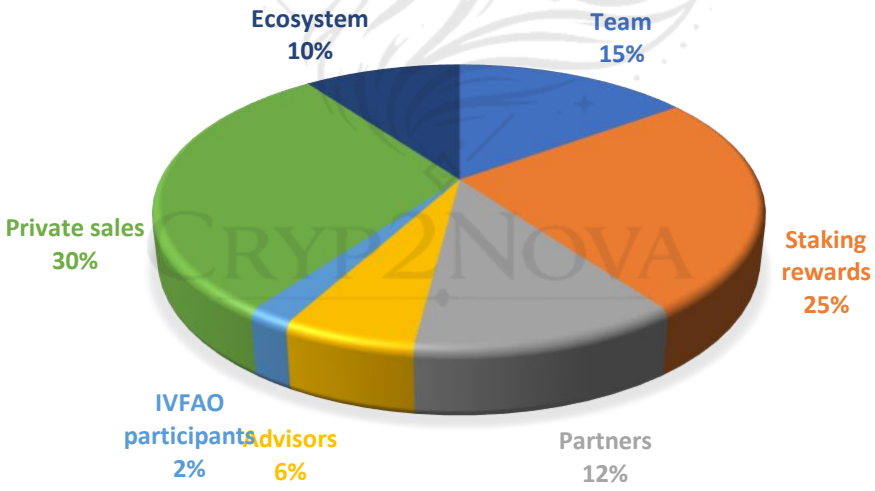



*Figure 2: Distribution of VAI Tokens*

## RISKS



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VAIOT, as every project and every VFA investment opportunity, is burdened with risk. Every Participant should carefully consider Section I - RISKS on page 301 before making any decision on acquiring VAI Tokens.

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# I. RISKS

The following is a non-exhaustive disclosure of principal risk factors which are considered to be material by the Company in connection with the IVFAO and the acquisition, holding and/or use of the VAI Token, as well as, to the extent applicable, the use of the VAIOT Platform at any moment in time. Participants should consider these risk factors alongside all other information provided in the Whitepaper and are advised to consult with their professional advisers (including their financial, accounting, legal, tax, technical, or other advisers and experts) before deciding to obtain VAI Tokens.

In addition, Participants should be aware that the risks described herein may combine and thus intensify one another. The Company believes that the following risk factors may even affect its own business, as well as any external valuation of the VAI Token (which external valuation is beyond the scope and purpose of the reason behind the VAIOT Platform and the Company's business). Most of these risk factors are contingencies that may or may not occur, and the Company is not in a position to predict the likelihood of such contingencies occurring. By acquiring, holding, and using VAI Tokens, the Participant expressly acknowledges and assumes the following risks:

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General suitability of the token acquisition

The acquisition of VAI Tokens from the Company is only suitable for financially sophisticated persons who are capable of evaluating the merits and risks of such an acquisition, or other persons who have been professionally advised concerning the token acquisition and who have sufficient financial resources to be able to bear any losses that may arise from there (which may be equal to the whole amount spent in connection with the token acquisition). Such an acquisition should not be seen as an investment or a financial asset.

Risk of losing access to VAI Tokens due to loss of Private key/s, Custodial Error or Participant error

A Wallet is necessary to acquire, hold, and dispose of VAI Tokens. The Participant hereby understands that he is responsible for setting up the Wallet with a third-party provider to hold VAI Tokens, and he is responsible for implementing reasonable measures for securing the Wallet. Accordingly, loss of requisite private key/s associated with the Wallet holding VAI Tokens will result in loss of such VAI Tokens and any other cryptocurrencies and/or tokens



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held within. Moreover, any third party that gains access to such private key/s, including by gaining access to login credentials of the Wallet that the Participant uses, may be able to misappropriate the Participant's VAI Token. Any errors or malfunctions caused by or otherwise related to the Wallet that the Participant chooses to receive and hold VAI Tokens, including the Participant's own failure to properly maintain or use such Wallet or caused as a result of the choice of third party provider for the Wallet, may also result in the loss of VAI Tokens. Additionally, the Participant's failure to follow precisely the procedures set forth in the Terms for acquiring and receiving VAI Tokens, including, but not limited to, the provision of the wrong Wallet address for receiving VAI Tokens, may also result in the loss of VAI Tokens.

Risk of mining attacks

As with other decentralized cryptographic tokens based on the ERC-777 token standard, VAI Tokens are susceptible to attacks by miners in the course of validating transactions on the Ethereum Blockchain, including, but not limited to, double-spend attacks, majority mining power attacks, and selfish-mining attacks. Any successful attacks present a risk to VAI Tokens, including, but not limited to, accurate execution and recording of transactions involving VAI Tokens.

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Risk of network attack

After the migration to the proprietary Blockchain solution based on the Polygon Edge, VAI Tokens are susceptible to network attacks. There is a minor risk of "Nothing at Stake problem" and the issue of the majority of voting rights. In "Nothing at Stake problem," the network validators may find themselves in a situation in which they have nothing to lose by making malicious decisions through voting (e.g., by dividing the network), thereby preventing a consensus from being achieved or manipulating its operation. VAIOT utilizes both slashing protocol and economic incentives to ensure the mitigation of "Nothing at Stake problem." The other risk of a network attack is the risk of one entity obtaining the majority of voting rights that may lead to arbitrary decisions in the block creation process.

With a PoS, the attacker would need to obtain the majority of the VAI Tokens to carry out a network attack. The Proof of Stake makes it disadvantageous for a Tokenholder with a majority stake in a DLT Asset to attack the network. Although it would be difficult and expensive to accumulate the majority of the VAI Tokens, a Tokenholder with a majority stake in VAI Tokens



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would not have it in his best interest to attack a network of which he holds a majority share. If the value of the DLT Asset falls, this means that the value of his holdings would also fall, and so the majority stake owner would be more incentivized to maintain a secure network.[1]

Risk of hacking and security weakness

Hackers or other groups or organizations may attempt to interfere with VAI Tokens in several ways, including, but not limited to, denial-of-service attacks, Sybil attacks, spoofing, smurfing, malware attacks, consensus-based attacks, and any such similar events which could have an impact on VAI Tokens, the VAIOT Platform and the services the Company may offer from time to time.

Risk of a security weakness in the Smart Contract, the Website and VAI Tokens source code or any associates software and/or infrastructure

There is a risk that the Smart Contract, the Website, the VAIOT Platform, and VAI Tokens may unintentionally include weaknesses or bugs in the source code interfering with the use of, or causing the loss of, VAI Tokens; the source code of the Website is open and could be updated, amended, altered or modified from time to time.

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The Company is unable to foresee or guarantee the precise result of an update, amendment, alteration, or modification. As a result, any update, amendment, alteration, or modification could lead to an unexpected or unintended outcome that adversely affects VAI Tokens and/or the VAIOT Platform or the Website. As a result, VAI Tokens may be lost.

Risk of no listing or low/no liquidity

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Even though there are currently online services available which enable an exchange of cryptographic tokens with other such tokens, or even enable the exchange of cryptographic tokens for fiat money, there are no warranties and/or guarantees that VAI Tokens will be made available for exchange with other cryptographic tokens and/or fiat money. No guarantees are given whatsoever concerning the capacity and/or volume of such exchange/s. Such exchange, if any, might be subject to poorly understood regulatory oversight, and the Company does not

[1] Proof of Stake (PoS), Investopedia, https://www.investopedia.com/terms/p/proof-stake-pos.asp, accessed 28.02.2020.



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give any warranties regarding any exchange services providers. Users, including the Participant, if applicable, might be exposed to fraud and failure affecting those exchanges.

Risk of no secondary market

The Company has designed the payback bonus mechanism that aims at mitigating the risk of insufficient liquidity by supporting the demand side of the market. In that mechanism, the Company buys VAI Tokens from the secondary market to fuel the payback bonus mechanism and distribute such VAI Tokens to the VAIOT Platform users, hence supporting liquidity. Nevertheless, the market for VAI Tokens may be low in terms of liquidity and a Tokenholder may find it more difficult to identify willing buyers for their VAI Tokens. The existence of an orderly and liquid market depends on a number of factors. Accordingly, there can be no assurance that an active secondary market for VAI Tokens will develop, or if it develops, that it will continue. Furthermore, there can be no assurance that a Tokenholder will be able to sell or otherwise trade in the VAI Tokens.

Risk of an eventual unfavorable fluctuation of VAI Tokens' value

The VAIOT Platform is intended to be financially self-sufficient and self-financing after the Private Sale & Initial VFA Offering, and the Company commits to have no specific interest in the market value of VAI Tokens. Therefore, the Company considers that it shall not be affected by unfavorable fluctuation of VAI Tokens' value. On the other hand, Tokenholders are subject to such risk of eventual unfavorable fluctuation of VAI Tokens' value as the price of VAI Tokens may vary over time due to a number of factors affecting the value of Tokenholders' portfolios. In addition to the usual market forces, there are several potential events that could exacerbate the risk of unfavorable fluctuation in the value of ETH or VAI Tokens, including significant security incidents or market irregularities at one or more of the significant cryptocurrency exchanges.

Risk of malfunction in the Ethereum network or any other Blockchain and of competing platforms

VAI Tokens could be interacting with malfunctions unfavorably, including, but not limited to, one that results in the loss of VAI Tokens or prevents their use on the VAIOT Platform. It is possible that alternative platforms could be established that utilize the same open-source code



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and protocol underlying the VAIOT Platform and attempt to facilitate services that are materially similar to the VAIOT Platform. The VAIOT Platform may compete with these alternatives, which could negatively impact the VAIOT Platform, including the utility of VAI Tokens for the use on the VAIOT Platform.

Risk of uninsured losses

Unlike bank accounts or accounts at some other financial institutions, VAI Tokens are uninsured unless the Participant specifically obtains private insurance to insure them. Thus, in the event of loss of VAI Tokens or loss of VAI Tokens' value, there is no public insurer, such as the Investor Compensation Scheme or private insurance arranged by the Company to offer recourse to the Participant.

The risk associated with uncertain regulations and enforcement actions

The regulatory status of DLT Assets and their offering may be unclear or unsettled in many jurisdictions. It is difficult to predict how or whether regulatory authorities may apply existing regulation concerning technology and its applications, including the VAIOT Platform and the VAI Tokens. It is likewise difficult to predict how or whether legislatures or regulatory agencies may implement regulatory actions or changes to law and regulations affecting distributed ledger technology, its applications, and DLT Assets, including the VAIOT Platform and VAI tokens. Regulatory actions or changes to law and regulations could negatively impact VAI Tokens and the VAIOT Platform in various ways, including, but not limited to, a determination that the acquisition, holding and use or disposal and transfer of VAI Tokens constitutes a regulated instrument that requires registration or licensing of those instruments or some or all of the parties involved in the acquisition, contribution, sale and delivery thereof. The Company may cease operations or interrupt the token sale in a jurisdiction if regulatory actions, or changes to law or regulations, make it illegal to operate in such jurisdiction, or if it is commercially undesirable or no longer viable to obtain the necessary regulatory approval/s to operate or to provide the VAIOT Platform in such jurisdiction.

Risk of insufficient interest in VAI Tokens and the VAIOT Platform

VAI Tokens and the VAIOT Platform may stop being used by a large number of individuals, companies, and other entities, or there may be limited interest in the use of VAI Tokens and the



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VAIOT Platform. Such a lack of use or interest could negatively impact the development of the VAIOT Platform and, therefore, the potential utility of VAI Tokens.

Internet transmission risks

There are risks associated with using VAI Tokens, including, but not limited to, the failure of hardware, software, and Internet connections, or other technologies on which the VAIOT Platform or the use of VAI Tokens relies. Such failures may result in disruptions in communication, errors, distortions or delays when using VAI Tokens and the VAIOT Platform or the Website.

Risk of dissolution of the Company

It is possible that, due to any number of reasons, including, but not limited to, a decrease in VAI Token's utility, the failure of commercial relationships, intellectual property ownership challenges, unfavorable market conditions and added compliance and regulatory obligations, the use of the VAIOT Platform might no longer be viable to be offered or the Company may need to cease trading and be dissolved and liquidated.

Risk arising from lack of governance rights

Since VAI Tokens do not represent or confer any ownership right or stake, share or security or equivalent rights, intellectual property rights or any other form of participation relating to the Company, all decisions involving the Company will be made by the Company at its sole discretion, including, but not limited to, decisions to transfer more VAI Tokens for use, and to sell or liquidate the Company. These decisions could adversely affect the utility of the VAI Tokens the Participant holds.

Regulatory risks and market risks

The Company and its operations are or may be subject to a variety of domestic and/or EU and international laws, regulations, and directives, including those concerning privacy and data protection, consumer protection, data security, and others. These laws, regulations and directives, and the interpretation or application of these laws, regulations, and directives, could change. In addition, new laws, regulations, or directives affecting the Company, the VAIOT Platform, and VAI Tokens could be enacted, which could impact the utility of VAI Tokens and their use on the VAIOT Platform. Additionally, the Participants are subject to industry-specific



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laws and regulations or licensing requirements. If any of the parties fail to comply with any of these licensing requirements or other applicable laws or regulations, or if such laws and regulations or licensing requirements become more stringent or are otherwise expanded, it could adversely impact VAI Tokens and the VAIOT Platform, including the VAI Tokens' utility on the VAIOT Platform. The Participant hereby accepts the risk that in some countries, VAI Tokens might be considered, now or in the future, a security token. In this case, the Company gives no representations, warranties, or guarantees that the VAI Tokens are not considered to be security tokens, securities, financial instruments or similar medium, in all countries. The Participant hereby accepts to be solely responsible for the legal, financial, and any other risks connected to VAI Tokens as a security in his country and to be the only responsible for checking if the holding, using and the disposal of VAI Tokens is legal in his country. Also, changes in laws, regulations, and directives governing the Company's operations, including but not limited to changes to the applicable tax regime or regimes, may adversely affect its business and, consequently, the VAIOT Platform. Any change in the Company's tax status, or taxation legislation in Malta or elsewhere, could affect the value of its financial holdings, its business, the Company's ability to achieve its business objectives and continual commitment to the development of the VAIOT Platform.

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Other inherent risks

The Participant understands and accepts the inherent risks associated with VAI Tokens, to the extent not covered elsewhere in the terms, including, but not limited to, risks associated with (a) money laundering; (b) fraud; (c) exploitation for illegal purposes; and (d) any other unanticipated risks.

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Unanticipated risks

In addition to the risks included in this Whitepaper, there are other risks associated with the Participant's acquisition, holding, and use of VAI Tokens, including some that the Company cannot or may not anticipate. Such risks may further materialize as unanticipated variations or combinations of the risks discussed in the Whitepaper. The Participant hereby represents and warrants that he will take sole responsibility for any restrictions and risks associated with the holding or use of VAI Tokens. If any of the risks mentioned in the terms are unacceptable or



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the Participant is not in a position to understand them, the Participant should not acquire, hold, or use VAI Tokens.

**CERTAIN INFORMATION CONTAINED IN THIS WHITEPAPER CONSTITUTES "FORWARD-LOOKING STATEMENTS", WHICH CAN BE IDENTIFIED BY THE USE OF FORWARD-LOOKING TERMINOLOGY SUCH AS "MAY", "WILL", "SHOULD", "EXPECT", "ANTICIPATE", "PROJECT", "ESTIMATE", "INTEND", OR "BELIEVE" OR THE NEGATIVES THEREOF OR OTHER VARIATIONS THEREON OR COMPARABLE TERMINOLOGY.**

**DUE TO VARIOUS RISKS AND UNCERTAINTIES, INCLUDING THOSE DESCRIBED UNDER THE SECTION I - RISKS, ACTUAL EVENTS OR RESULTS OR THE ACTUAL PERFORMANCE OF THE COMPANY MAY DIFFER MATERIALLY FROM THOSE REFLECTED OR CONTEMPLATED IN SUCH FORWARD-LOOKING STATEMENTS.**

The forward-looking statements in the Whitepaper include, among others, statements about:

- Issuer's ability to develop the VAIOT Platform with Intelligent Contracts and other technological components as described in this Whitepaper;
- Issuer's ability to generate, offer or maintain the value of VAI Tokens.

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# II. VAIOT PLATFORM & INTELLIGENT CONTRACTS

## INTRODUCTION

Billions of business and private operations are made every day. Yet, although we live in the digital era, these operations are extensively conducted using traditional channels and protected by traditional contracts and trusted third parties.

The VAIOT Project aims to provide the broader public with a solution that offers a simpler, more efficient, and cheaper way to initiate, execute and protect such daily operations. We introduce an upgrade to those processes by using modern, innovative solutions, combining Artificial Intelligence (AI) with Blockchain technology.

Blockchain and AI are two technological trends that are gaining prominence. They are both immensely complex, and both have the potential to reshape almost every area of our life. Blockchain technology provides superior security and authorization levels to digital transactions, while AI is intended to support our daily processes by automation and solve problems by eliminating human error. When put together, these two ground-breaking technologies have the potential to become even more revolutionary.

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In this chapter, we present the challenges to overcome, the VAIOT Platform as an integrated solution to achieve that goal, and Intelligent Contracts as a set of technologies, both proprietary and utilizing third-party solutions.

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## 1. THE VAIOT PLATFORM

The VAIOT Platform, as an integrated solution, combines Artificial Intelligence and Blockchain to create new ways of digitally accessing services and securely concluding legal agreements using a natural user interface.

VAIOT enables both businesses and consumers to utilize a set of technologies called Intelligent Contracts. It serves as a personal assistant, available on mobile devices via a simple natural user interface (e.g., voice conversation), providing business solutions in two areas:

- AI-based legal services, such as intelligently creating custom contracts (both printable, traditional written contracts, as well as digital versions, securely stored on the



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Blockchain).

- A novel, intelligent service distribution channel that empowers businesses to adapt to modern customers by providing a new way of accessing services.

As an integrated solution, The VAIOT Platform consists of:

- The VAI Token and the respective token economy (as described in this Whitepaper),
- Intelligent Contracts – an innovative technological concept combing a set of technologies, both proprietary and utilizing third-party solutions,
- VAI products/business lines based on Intelligent Contracts and other technological solutions and concepts utilized in the project.

This document describes each of these elements in detail.

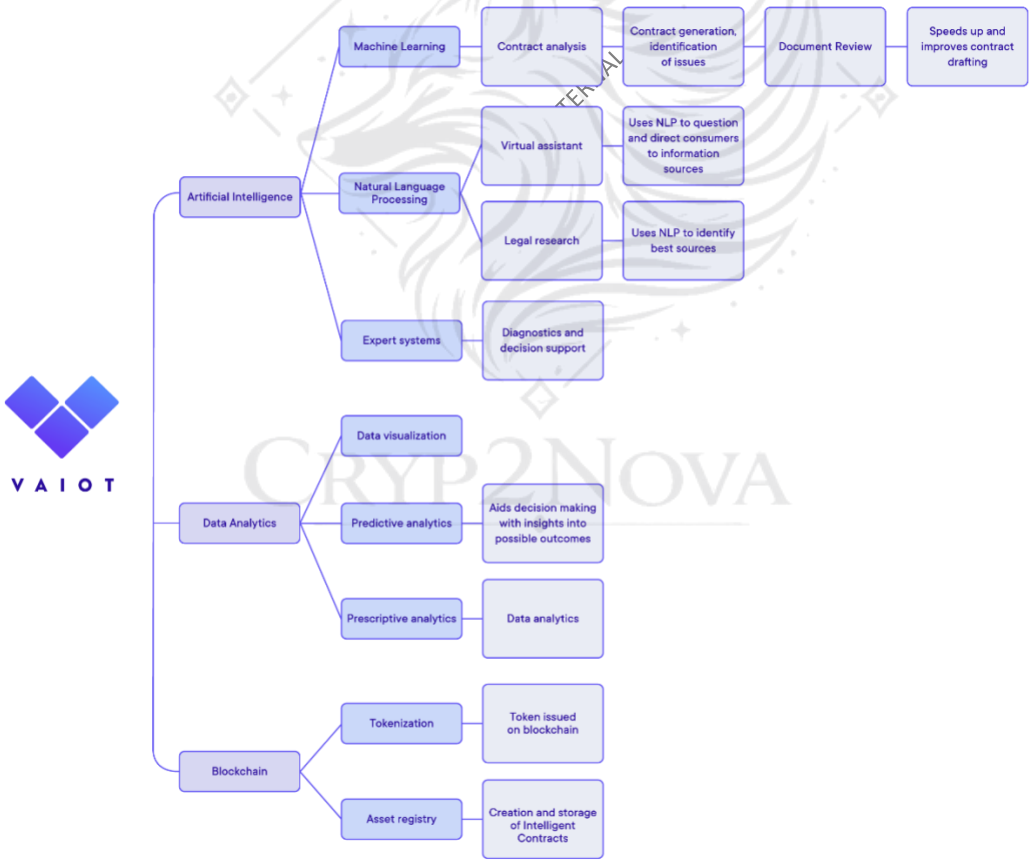



*Figure 3: VAIOT Platform – key components*





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The VAIOT solution takes digitization of business and daily operations on the Blockchain further with the concept of Intelligent Contracts by:

- simplifying the process of conducting business or daily operations, such as buying or selling goods and services, as well as creating digital and traditional contracts thanks to a Natural User Interface (NUI);
- optimal suitability to the needs of the user – advanced UX design;
- introducing the Virtual AI Legal Assistant that simplifies the interaction and supports users in preparing legally binding contracts;
- a system of intelligent suggestions for contract templates;
- advanced fraud detection made possible through AI learning mechanisms;
- ensuring interoperability for application universality;
- protecting the confidentiality of the contract and transaction data;
- providing access to a database of legal agreements utilized for training the AI and for the contract creation process itself;
- employing authentication methods for contract data access.

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## 2. VAIOT SOLUTIONS

VAIOT uniquely combines the skills and knowledge of a lawyer, a Blockchain programmer, and a personal assistant. VAIOT utilizes multiple AI mechanisms, such as natural language processing, **VAIBC Technology, IBM Watson** components, Microsoft's Luis, OpenAI's GPT-3, ChatGPT and GPT-4, to create a new channel for delivering and accessing various services with vastly improved user experience.

### Virtual AI Legal Assistant

Combining Blockchain with the concept of smart contracts, AI, and natural user interface, VAIOT will introduce its Virtual AI Legal Assistant to the market, focusing on law firms, businesses, and individual consumers.



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- Effortless communication with technology via a natural user interface makes requesting and obtaining certain legal services, such as creating contracts, as easy as having a conversation.
- The user simply needs to answer a few questions, and the contract will be generated automatically, both in a traditional, written, ready-to-sign form and as a digital contract, based on Blockchain.
- No legal or technical knowledge is required.
- VAIOT utilizes a vast database comprising the legal codes and best practices specific to each supported region.
- Designed for both law professionals and everyday consumers.

**AI-backed Digital Service Distribution Channel**

As customers expect easier, quicker, and cheaper solutions as well as new digital channels for buying services and conducting instant transactions, VAIOT introduces the Virtual AI Assistant to meet those expectations.

- The personal assistant functionality with a natural user interface offers a new level of customer experience.
- Users can easily purchase products and services as well as communicate with the company digitally through an automated service distribution channel.
- The customer simply makes his request to the Virtual AI assistant and provides input data as requested – the technology takes care of the rest.
- As an efficient and innovative channel for sales, marketing, and customer service, the Virtual AI Assistant simplifies business processes and reduces costs for both enterprises and consumers.
- Blockchain provides an additional level of security, protecting customer interests.

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## 2.1. VAIOT'S AI-BACKED LEGAL SERVICES

In virtue of the Intelligent Contracts technology, the VAIOT Platform allows for an introduction of AI-backed legal services and hence can be categorized as a Legal Technology solution.

### 2.1.1. LEGAL TECH OVERVIEW

"Legal Technology" traditionally referred to the application of technology and software to help law firms with document management systems, billing, accounting, and electronic discovery. Since 2011, Legal Tech has evolved to be associated more with technology startups disrupting the practice of law by giving people access to online software that reduces, or in some cases eliminates, the need to consult a lawyer, or by connecting people with lawyers more efficiently through online marketplaces and lawyer-matching websites.[2]

With increasing technological capabilities, turbulent business environment, and increased market requirements, Legal Technology must evolve, offering new solutions both for law firms and consumers. Such solutions have to introduce advanced automation, legal research capabilities, as well as practice and case management.

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The recent developments in the Legal Tech area focus on:

- allowing clients and lawyers to connect easily through tools and marketplaces;
- eliminating or reducing the need for a lawyer by equipping consumers and businesses with tools allowing to complete legal cases or prepare contracts by themselves;
- providing a broad audience with data and contract analysis capabilities, including automation;
- optimizing the practice of law;
- introducing legally-binding digital signature which helps to verify the digital identity of each signatory, maintains the chain of custody for the documents and can provide audit trails;
- automating the drafting of contracts, wills, legal writing, and other legal activities through software.

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[2] *What is Legaltech? An introduction*, Fintechnews Switzerland, https://fintechnews.ch/fintech/what-is-legaltech-an-introduction/19065/, accessed 14.03.2020.



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Three stream categories can be distinguished within Legal Tech:

1. **Technologies facilitating the access to and the processing of data**

This is the most general category and consists of "enabler technologies" – such as cloud storage tools and cybersecurity solutions. This category attempts to support the competitiveness of the legal market and legal research.

2. **Support solutions**

This category comprises "support-process" tools to adopt more effective case management and "back-office" systems to maximize the potential of the law firm's administration.

3. **Substantive law solutions**

This category adopts solutions that assist or even replace legal advice from lawyers in the execution of specific legal tasks. This category takes a broader view and includes various subfields such as automated contracts, e-discovery, online dispute resolutions, legal analytics, Blockchain-based technologies, and, in particular, smart contracts[3].

### 2.1.2. VAIOT – THE LEGAL TECH SOLUTION

The VAIOT Platform with Intelligent Contracts technology, offering a Virtual AI Legal Assistant business solution, falls into the category of Substantive Law Solutions. The combination of Blockchain (and the overall concept of smart contracts) and Artificial Intelligence enables the Issuer to offer the Virtual AI Legal Assistant with the ability to create both traditional contracts (utilizing a vast legal database) and digital contracts on the Blockchain to a market of law firms, businesses and individual consumers. It is directed both at users who are familiar with legal concepts or perform legal work, as well as users who do not hold any knowledge in that area. As the technology of Intelligent Contracts makes possible automating the creation and execution of contracts, we perceive it as a solution "which assists or even replaces legal advice from lawyers in the execution of specific legal tasks" (as defined above).

It needs to be stressed that the introduction of VAIOT's Intelligent Contracts and its utilization in the **Virtual AI Legal Assistant solution will support legal professionals in performing more mundane tasks, leaving the more sophisticated, advanced legal matters to humans,**

[3] Based on: Marcelo Corrales, Mark Fenwick, Helena Haapio, *Legal Tech, Smart Contracts and Blockchain,* https://link.springer.com/book/10.1007%2F978-981-13-6086-2, accessed 07.05.2020.



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**hence allowing law firms to fully utilize their resources by focusing human potential on legal complexities which cannot and should not be addressed by technology.**

### 2.1.3. CHALLENGES MET AND PROCESSES IMPROVED

The current process of technology development allows for further digitization, increased security, and increased efficiency for various daily operations. At the same time, the innovative technologies developed are often not available to most of the global population. For instance, current Blockchains lack the kind of easy and intuitive usability necessary to enable the market to scale up and allow for mass adoption.

VAIOT's AI-backed Legal Tech solution offers an opportunity to improve various business and customer operations with the use of innovative technology that mitigates several process-related challenges, which include:

- **People often use free versions of contracts found online**
  Legal contract templates available on the Internet are rarely the most optimal for any given set of circumstances. On the other hand, access to premium services of this kind is usually intended for lawyers or professionals who work with legal matters on a daily basis. Utilization of the Virtual AI Legal Assistant minimizes the risks associated with formulating various contract provisions and makes this process much more accessible and convenient.

- **Consumers lack legal knowledge and skills**
  This challenge can be mitigated with the introduction of the Virtual AI Legal Assistant, which does not require any specialized knowledge from the user and is affordable and available at any time.

- **Legal services lack instant availability (the distance between people and legal firms and law, in general, can be reduced through the use of technology)**
  The Virtual AI Legal Assistant is available at any time from the user's smartphone, thus mitigating this challenge.

- **Legal services are time-consuming and expensive, which makes them unavailable for some consumers, who are then forced to use free solutions of poor quality**

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This can be improved with the introduction of the right, innovative technology. Legal services can be both faster and cheaper, allowing the wider society to benefit from affordable and accessible legal advice and protection.

- **Businesses and legal departments lose time and money on basic operations that could be easily automated thanks to AI, freeing up the human expertise for more advanced legal tasks**

  Introduction of the Virtual AI Legal Assistant will allow businesses to automate the preparation of standard contracts and the handling of essential legal matters, enabling overloaded professionals to focus on more advanced matters.

- **Although traditional contracts are still indispensable, they could be additionally digitized and secured on a Blockchain**

  Blockchain and the concept of smart contracts (if developed further) allow for a new level of innovation in the digitization of the legal sector. While the process of digitization will be gradual and require many iterations, VAIOT and Intelligent Contracts represent a significant step in this gradual approach, greatly enhancing legal processes and services through the employment of AI and Blockchain. Intelligent Contracts stored on the Blockchain can have execution rules applied, meaning they can be automatically executed in the digital form if certain specified conditions are met.

**Improvements required to the smart contracts concept**

Smart contracts were a step in the right direction in digitizing transactions and other agreements. People often make transactions and sign contracts in environments that lack security and trust. They must use intermediaries to increase security and pay the price for the trust factor.

As smart contracts are code-based, the correctness of the code is critical. Nowadays, the key usability issue is that if someone wishes to use smart contracts, they need to possess certain programming skills. This, unfortunately, is an impassable barrier for many potential users, preventing them from using the technology.

If a potential user does know programming and wishes to create a smart contract, another issue arises. Flaws and loopholes in smart contract code may open the way for a third party with malicious intent. With this in mind, VAIOT designed Intelligent Contracts to employ AI to remove the need for human programming, thus eliminating both of the above-mentioned barriers with one blow. When VAIOT's Virtual AI Legal Assistant creates a contract based on



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the description of the user's requirements and input, then checks its correctness on both the legal and code level. The result is a secure and issue-ready Intelligent Contract tailored to the specific needs of the user.

The Issuer has identified the following key challenges:

- **Smart contracts require programming skills and are not accessible to an average user via a practical interface (usability problem)**

  Blockchain is praised for being a decentralized platform, removing the need for third parties from the equation. On the other hand, the very foundation of a Blockchain system is developed by people, a group of core developers. This means that a smart contract is also a piece of code programmed and utilized on a Blockchain by human users. This causes some complications. First of all, the possibility of human error makes the system exploitable. Secondly, to use smart contracts in everyday life, we need programming skills or hire programmers to write the code for us each time we want to create a digital contract. This is an obstacle if Blockchain and digital contracts are to be used daily for operations of all kinds. The lack of a usable user interface makes Blockchain inaccessible for an average user. To illustrate this point, here is an example of a smart contract code:

```
/* Allow another contract to spend some tokens in your behalf */
function approve(address _spender, uint256 _value)
    returns (bool success) {
    allowance[msg.sender][_spender] = _value;
    return true;
}

/* Approve and then comunicate the approved contract in a single tx */
function approveAndCall(address _spender, uint256 _value, bytes _extraData)
    returns (bool success) {
    tokenRecipient spender = tokenRecipient(_spender);
    if (approve(_spender, _value)) {
        spender.receiveApproval(msg.sender, _value, this, _extraData);
        return true;
    }
}

/* A contract attempts to get the coins */
function transferFrom(address _from, address _to, uint256 _value) returns (bool success) {
    if (balanceOf[_from] < _value) throw;                 // Check if the sender has enough
    if (balanceOf[_to] + _value < balanceOf[_to]) throw;  // Check for overflows
    if (_value > allowance[_from][msg.sender]) throw;   // Check allowance
    balanceOf[_from] -= _value;                           // Subtract from the sender
    balanceOf[_to] += _value;                             // Add the same to the recipient
    allowance[_from][msg.sender] -= _value;
    Transfer(_from, _to, _value);
    return true;
}

/* This unnamed function is called whenever someone tries to send ether to it */
function () {
    throw;     // Prevents accidental sending of ether
}
```

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[4] Source: *https://www.ethereum.org/token,* accessed 07.05.2020.





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- **Programming skills are not enough when facing the complexity of a contract ("lack of legal knowledge" problem)**

  Mere programming skills are not enough to design a contract that supports real-life scenarios. Even if someone has the programming skills necessary, he must remember that in case of more complex contracts, he will also need legal skills, knowledge, and time to make them watertight, free from loopholes and flaws. Programming skills are required to code a digital contract. Still, they are not sufficient to draft a proper legal agreement that would include all provisions for the validity of the contract while laying out all of the relevant rights and obligations of the parties involved.

  Jimmy Song, the veteran Bitcoin Core Developer, wrote: "A truly intelligent contract would take into account all the extenuating circumstances, look at the spirit of the contract and make rulings that are fair even in the murkiest of circumstances"[5]. Current rule-based digital contracts do not deliver on this idea, as they fail to take into account different circumstances, the local law, and other specific considerations. VAIOT's Intelligent Contracts will be based on state-of-the-art AI to provide the functionality that the current Blockchain solutions lack. Continuous learning will allow the AI-backed system to adapt to various situations, not only following instructions but also taking into account the legal context and other particulars of a given context. We want to make it intelligent, not rule-based.

  We understand that a genuinely complicated contract may require proper legal knowledge and competence. Since smart contracts are often written by non-specialists, various problems may occur. VAIOT's Intelligent Contracts employ state-of-the-art AI technology supported by top-class legal content to guide the contract creation process. The aim is to ensure the security of Intelligent Contracts on both the technological and conceptual level, which means analyzing hundreds of different options and scenarios to make sure that the contract is legally sound and will deliver the expected value. We see AI as the technology that will gradually allow analysis, building, and execution of such contracts flawlessly.

[5]Jimmy Song, *The Truth about Smart Contracts*, https://medium.com/@jimmysong/the-truth-about-smart-contracts-ae825271811f, accessed 07.05.2020.



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- **Legal systems require time to adopt Blockchain and AI technologies ("legal revolution" problem)**

  "Second, and this brings us back to AI: what happens if a smart contract infused with learning capacities, accesses contaminated pools of data? This could cause the smart contract to be executed in ways incompatible with the parties' intent, bringing into question whether a smart contract can even be considered a contract"[6]. This is a legitimate concern that can only be removed evolutionarily – Intelligent Contracts will not be able to replace all contracts once implemented. The evolutionary process will take time and gradually include more complicated use-cases.

- **We cannot entirely exclude third parties from the equation – not at first and not for all transactions (third party exclusion issue)**

  The "smart" part of the contract is in not needing to entrust a third party to execute the agreement. If we want to make the concept of digital and secure transactions (backed by Blockchain) truly global, we cannot entirely exclude third parties from the equation. A truly intelligent contract will require a third-party involvement in specific, real-life situations. At the same time, the digitization of global transactions demands the security and interaction model used by Blockchain. In other words, we need to make digital contracts Intelligent, which means usable, widely accessible, supported by AI logic, and with a visible legal component to back the technological certainty offered by Blockchain.

  Therefore, Intelligent Contracts will require third-party involvement in specific, real-life situations. There is an undeniable connection between the digital world of Intelligent Contract and its physical counterpart, which is reflected by the concept of ownership (both digital and physical). The so-called "Oracle problem" requires a trusted third party to notify the Blockchain of the physical reflection of a digital transaction performed via an Intelligent Contract. The concept of Intelligent Contracts includes Oracles, which ensure that the real-life status will reflect the conditions specified in the digital contract covering a Blockchain transaction.

[6] Iria Giuffrida, Fredric Lederer, Nicolas Vermerys, *A Legal Perspective on the Trials and Tribulations of AI: How Artificial Intelligence, the Internet of Things, Smart Contracts, and Other Technologies Will Affect the Law, 68, Case W. Res. L. Rev. 747 (2018),* https://scholarlycommons.law.case.edu/caselrev/vol68/iss3/14, accessed 12.12.2018.



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### 2.1.4. VIAOT'S AI-BACKED LEGAL TECH SOLUTION EXPLAINED

VAIOT introduces the Legal Tech solution, backed by Intelligent Contracts, called VAILawyer. A Virtual AI Legal Assistant is handed to the users, both businesses and individual consumers, in the form of a well-designed application utilizing multiple, AI mechanisms, such as **VAIBC Technology, IBM Watson** components, Microsoft's Luis, OpenAI's GPT-3, ChatGPT and GPT-4), enabling advanced user experience. Users utilize the application to communicate with the technology via a voice user interface (as part of a natural user interface) and to request and obtain certain legal services, such as contract preparation delivered by VAIOT's Intelligent Contracts. The user simply provides input for the contract to be generated by the Virtual AI Legal Assistant. The contract will be generated both in a traditional, written, ready-to-sign form and as a digital contract, based on Blockchain. The preparation of the contract does not require legal or technical knowledge from the user. VAIOT's solution is based on an extensive legal database representing the best legal practices specific for each of the supported regions.

To increase the usability of the entire process, all data required to conclude a contract is collected from the user using an intelligent Virtual AI Legal Assistant as part of a voice conversation. The use of Blockchain technology makes it possible, among other things, to keep a secure register of contracts and verify their enforcement. The use of additional cryptographic mechanisms enables all data to be processed while ensuring security and confidentiality for users in accordance with the highest international standards.

As a Legal Tech solution, the Virtual AI Legal Assistant assists the user, sometimes replacing traditional legal services. As mentioned earlier in this Whitepaper, we understand that lawyers and traditional legal services are indispensable. On the other hand, we want to increase the availability of legal services and knowledge and allow legal professionals to move to more advanced areas of law. We also understand the necessity of traditional contracts, and we plan to introduce digital, Blockchain-based contracts gradually so they can exist in parallel and support legal systems as they continue to evolve.

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### 2.1.5. BENEFITS

As a personal legal assistant, VAIOT will be available at any time on the user's mobile device, delivering a number of benefits:

- faster and affordable legal services, instantly available, making it possible for a broad audience to easily create contracts and obtain legal information and protection if required;
- quality contracts (both in the traditional form and highly-secure digital, Blockchain-based) ready to be generated at the user's request, eliminating the need for free, insecure contract templates found on the Internet and expensive, time-consuming contracts delivered by legal firms;
- automation of contract generation and basic legal processes for both businesses and consumers, reducing costs and increasing the efficiency of legal processes while allowing legal professionals to focus on more advanced tasks;
- gradual digitization of the contracts on the Blockchain, enabling the support of traditional, written contracts for more security, transparency, and the introduction of execution rules:
    - no programming skills required to create Blockchain-based digital contracts, which will be generated by VAIOT's Code Generation Engine allowing Blockchain usability,
    - legal knowledge backing up the code side of the Blockchain contract with VAIOT's Virtual Legal Assistant,
    - a gradual introduction of digital contracts to match the pace of digital transformation in the legal sector;
- high availability (24/7/365) and almost immediate contract generation and provision of analysis services (VAIOT's Virtual AI Legal Assistant available on the user's device);
- increased UX thanks to a natural user interface;
- advanced security due to Blockchain and cryptography.

## 2.2. VAIOT'S AI-BACKED DIGITAL SERVICE DISTRIBUTION CHANNEL

The VAIOT Platform with the Intelligent Contracts technology allows for the introduction of a novel, intelligent service distribution channel that empowers businesses to adapt to modern customers by providing a new way of accessing services.

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The technology being developed for VAILawyer can be adapted to creating digital service distribution channels at the current stage of the project. Based on market research and established business plans, VAIOT in this form will be initially introduced as an Insurtech solution.

### 2.2.1. INSURTECH OVERVIEW

While there is no standard definition of the term "Insurtech," it can be described as the innovative use of technology in insurance. Insurtech is a subset of "Fintech," or financial technology. Fintech has transformed the banking world (e.g., Zelle or Square, some of the innovative Fintechs, offer mobile payments with pioneering smartphone card swiper technology), and now Insurtech is beginning to alter the business models and competitive landscape of the insurance industry.

Insurtechs are technology-led companies that enter the insurance sector, taking advantage of new technologies to provide coverage to a more digitally savvy customer base. In some locations, regulatory barriers have been lowered. In Australia, Singapore, and the UK, for example, Insurtech businesses have been encouraged to test their innovative business plans on specific client segments without the need to conform to the full regulatory frameworks that apply to incumbents. Like Fintechs, Insurtechs are extending innovation throughout the sector, creating a competitive threat to incumbents, but also potentially valuable opportunities for partnering on the changing terrain. Customer expectations of instant digital transactions sustained seamlessly across digital channels are increasingly the norm.[7]

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### 2.2.2. VAIOT - THE INSURTECH SOLUTION

The VAIOT Platform utilizing the Virtual AI Assistant introduces Intelligent Contracts as a new technological concept for the insurance sector. As customers expect easier, quicker, and cheaper solutions, as well as new digital channels for buying services and conducting instant transactions, VAIOT will meet these expectations. VAIOT's Virtual AI Assistant offered to the insurance sector will introduce a new level of customer experience. It is the perfect solution for the conclusion of insurance contracts and ancillary processes. At first, VAIOT plans to position itself on the European market and gradually extend operations outside Europe while increasing

[7] Tanguy Catlin, Johannes-Tobias Lorenz, Björn Münstermann, Valentino Ricciardi, Insurtech – the threat that inspires, 01.03.2017, https://www.mckinsey.com/industries/financial-services/our-insights/insurtech-the-threat-that-inspires, accessed 23.06.2020.



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the number of types of insurance offered. VAIOT's Virtual AI Assistant being a new, innovative sales and customer service channel will simplify sales processes, reduce costs for consumers and insurance companies as well as provide a new level of security thanks to Blockchain.

### 2.2.3. CHALLENGES AND PROCESSES IMPROVED

The current pace of technological, socio-economic, and demographic changes requires companies to adapt their service provision channels to customer expectations. This raises a fair amount of challenges and forces significant process improvements in various economic sectors. Increasing competition on almost every market requires that actions be taken to capture more customers and, as a result, more revenue.

VIAOT's technology offers an opportunity to reengineer business processes and face both contemporary challenges as well as customer expectations. Some of the benefits of VAIOT's intelligent, digital service distribution channel include:

- **Improvement of current sales and customer services processes through new technology**

  The opportunity that comes with AI and Blockchain technologies allows many companies from different sectors to improve their current processes, introducing a new level of automation, transparency, user experience, and security.

- **Introduction of a new, innovative digital communication and service provision channels for a digitally savvy customer base**

  Due to demographic and socioeconomic processes, new digital channels for various operations are required to expand the customer and user base. New generations tend to look for services that are offered through digital channels, thus reducing time, effort, and the level of interaction with the company and its representatives. Customers increasingly expect to get services and conduct transactions instantly and digitally, enabling technologies such as AI to have space within this market.

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- **Data gathering processes to be improved**

In a world where data is a critical asset, the introduction of new, automated, intelligent data gathering solutions, allowing companies to offer to their customers goods and services tailored to their needs, is a necessary improvement.

- **UX of the digital channels to be improved**

As the competition in digital channels between different companies throughout various sectors increases, proper user experience becomes one of the characteristics that decide about the success or failure of the product or service offered. The introduction of new technologies, especially AI, allows offering a more natural user interface, boosting user experience, and resulting in increased revenues.

- **The opportunity to reduce the costs of various business processes**

Automation delivered via new technologies applied to a number of business processes allows for cost reductions, increased efficiency, and enables companies to move their human resources to more advanced tasks.

- **The opportunity of 24/7/365 availability of services and sales channels**

Fully automated communication channels allow for 24/7 availability of various services. Customers can benefit from quicker and easier access, which affects buying decisions and increases sales.

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### 2.2.4. VIAOT'S AI-BACKED DIGITAL SERVICE DISTRIBUTION CHANNEL EXPLAINED

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Responding to a number of challenges and market requirements for various industries, VAIOT offers Intelligent Contracts as a technology set, allowing for the introduction of a new AI-backed Digital Service Distribution Channel.

The technology set includes the Virtual AI Assistant, which enables a new digital communication (sales, customer service, service provision, etc.) channel with the consumer. Users utilize the Virtual AI Assistant to review and buy goods and services.



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### 2.2.5. BENEFITS

The user interacts with the technology via a widely available, automated, client-owned, or open application, providing both the business and its customers with a number of benefits:

- a new, AI-based, digital communication, distribution, sales, marketing channel for businesses, allowing for highly personalized customer service;
- a new data-gathering tool for businesses;
- a natural user interface allowing users to communicate with the advanced technology easily, providing improved user experience;
- easy access to services with 24/7 availability; Virtual AI Assistant available on the users' mobile device;
- an increased pace of business and daily operations through automation and intelligent user interface;
- reduced operational costs for businesses due to process improvement and automation;
- in addition to selecting and presenting the best offers, it is also ready to finalize the sale process;
- a virtual personal assistant, customized to the specific user supporting the acquisition of goods and services (allowing i.a. to choose best offers),
- advanced security due to Blockchain and cryptography,
- the recordation of transactions on a Blockchain allowing non-repudiation, transparency, and increased security.

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## 3. INTELLIGENT CONTRACTS

The VAIOT Platform is defined by a set of technologies called Intelligent Contracts which utilize both VAIOT's proprietary solutions and third-party solutions, such as components of IBM Watson.

Intelligent Contracts comprise a cluster of technologies, including VAIBC, AI Virtual Assistant, IBM Watson components, VAIOT Code Generation Engine, OpenAI's GPT-3 and GPT-4) and a proprietary Blockchain solution based on Polygon.



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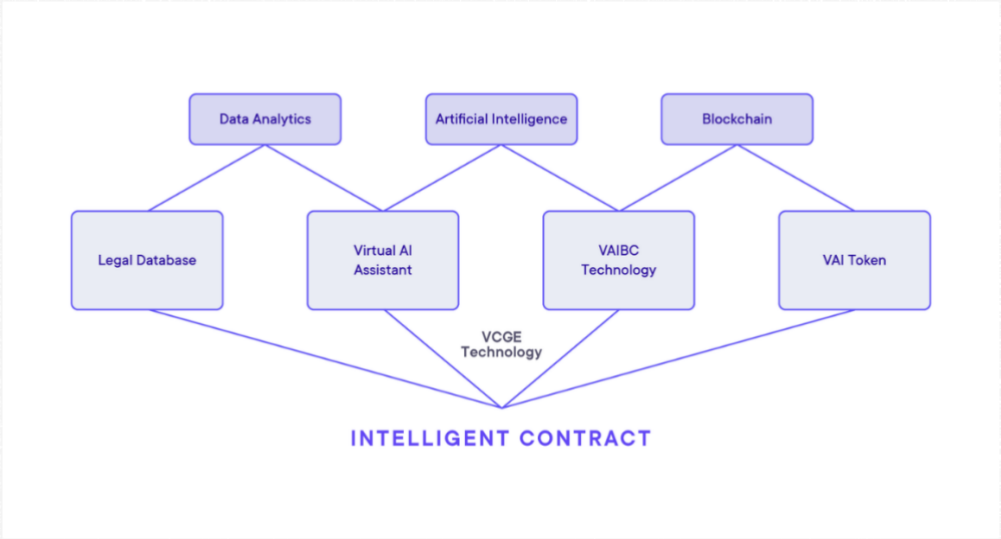



*Figure 4: Intelligent Contract's components*

**Introducing Intelligent Contracts to the market – core values**

Intelligent Contracts are based on integration between AI and Blockchain. This makes it possible to:

A. Improve various business and daily processes such as i.a. sales (new, innovative digital sales and marketing channel), customer service or legal services (AI legal assistant for both businesses and consumers);

B. Generate well-defined contracts, both traditional (ready-to-sign) and digital (on the Blockchain), improving on the concept of smart contracts (for both business and consumers).

**In regards to point A – Improving various business processes**

Using the personal voice assistant (AI Virtual Assistant) in the process of user's interaction with technology ensures seamless experience, allowing the user to communicate with the VAIOT Platform naturally and obtain goods and services quicker, easier, cheaper, with full data support and transparency. This is possible i.a. by providing a more natural and accessible form of data input and data presentation. The introduction of such an innovative communication channel has the potential to improve various existing business processes, such as sales (as an innovative digital sales channel), marketing, customer research, and legal services. This process improvement is possible through the introduction of the basic communication layer (user level),


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which is the Intelligent Front End – an application interface responsible for the communication with the user and visualization of results. Intelligent Back End brings all the processes together so that contracts in both human-readable and coded forms are created.

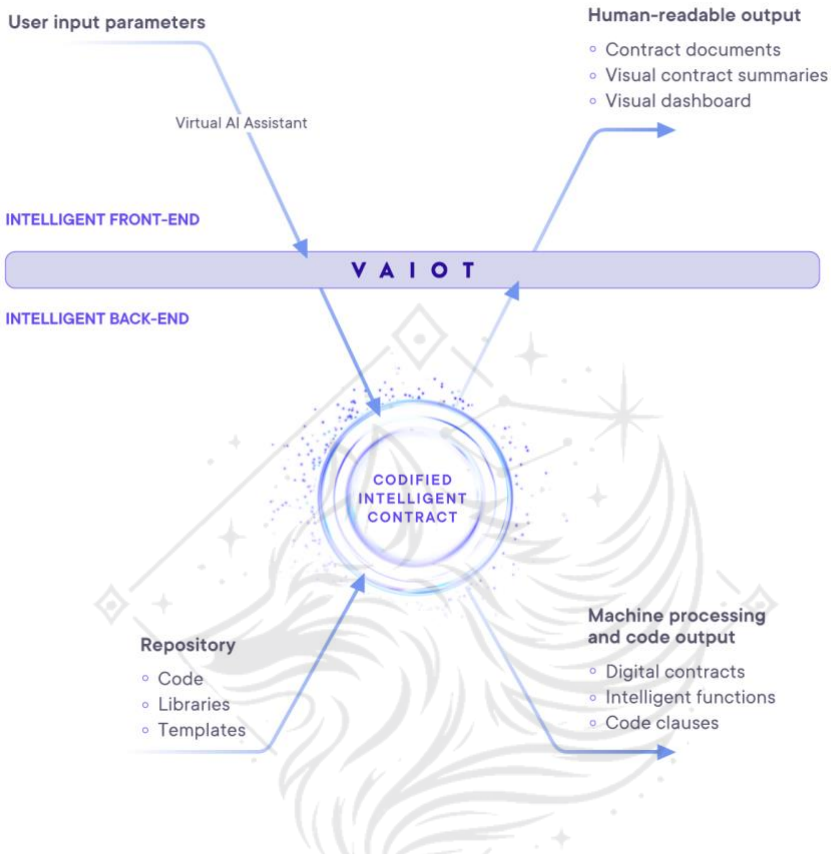



*Figure 5: Intelligent Contract's operation scheme*

**Regarding point B – Generation of traditional and digital contracts enhancing the concept of smart contracts**

VAIOT enables the end-user to create Intelligent Contracts utilizing a simple user interface, available on any electronic device, to create a contract backed by an advanced AI, serving as a personal contract assistant. The end-user will need to define the requirements, provide basic data via voice or text analysis technology, and communicate via the user interface. VAIOT AI will review its legal database, prepare a contract tailored to the user's needs, and make it secure thanks to Blockchain. With VAIOT, no programming skills or expertise are required anymore to design digital contracts.



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AI and VAIOT Code Generation Engine (VCGE) allow for automatic conversion of an abstract description into an executable program, based on Blockchain. The user-friendly application will allow consumers to input key elements of the contract. Then AI will identify the basic contract patterns and convert them into a clean, standardized and fraud-resistant Intelligent Contract. Certain aspects of the Intelligent Contract are coded, and whenever set conditions are met, the contract is executed and an irreversible entry is made in the ledger on a Blockchain. The usage of AI guarantees the highest level of Intelligent Contract security and best code performance.

**Enhancement of the concept of Smart Contracts**

VAIOT, with its Intelligent Contract, develops an entirely new approach to digital, Blockchain-based contracts, by improving on the overall concept of smart contracts. Smart contracts are intended to enable transactions without the involvement of a trusted third party. They can be self-executing and self-enforcing, partially or fully – parties can decide if the contract is executed automatically over the Blockchain and computer network, or triggered manually. The main problem with current solutions, as mentioned in the Section II.2.1.3 – CHALLENGES MET AND PROCESSES IMPROVED in the part regarding the "Improvements required to the smart contracts concept", is their complicated structure and the need for programming skills, as well as legal knowledge in case of some specific smart contract types and applications. The key purpose of a smart contract is the automatic fulfillment of specific provisions of the contract, as agreed between the participating parties. This means that for more complicated agreements and transactions, the parties are required to have some level of familiarity with the legal environment.

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With Intelligent Contracts, we propose a solution to these problems, handing over to the user both the programming skills (VCGE) and legal knowledge (VAIOT's Virtual AI Assistant) as a technology to serve them.

### 3.1. INTELLIGENT CONTRACTS - THE CREATION PROCESS

For Intelligent Contracts to be widely used, their creation process must be fast and straightforward, but also have an increased security level, from both the technological and legal perspective, thus ensuring that the whole operation is processed in the way the parties have planned while also protecting their interests.



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The VAIOT team has identified the main problems with the current Blockchain-based digital contracts and decided to simplify the whole process of contract creation by using a Natural User Interface (NUI) and AI. NUI allows the user to navigate through the contract creation process, provide the necessary input (such as scans of documents), and communicate with the other party. At the same time, the Virtual AI Assistant gathers the user's requirements and builds execution rules. Specifics will differ per contract type, but they will always be presented in a user-friendly way so that everyone, even a person without technical knowledge, could create a proper and secure contract. All this thanks to advanced AI, searching through its legal database and utilizing its learning and recognition capabilities to build a contract that is legally solid and secure in its execution.

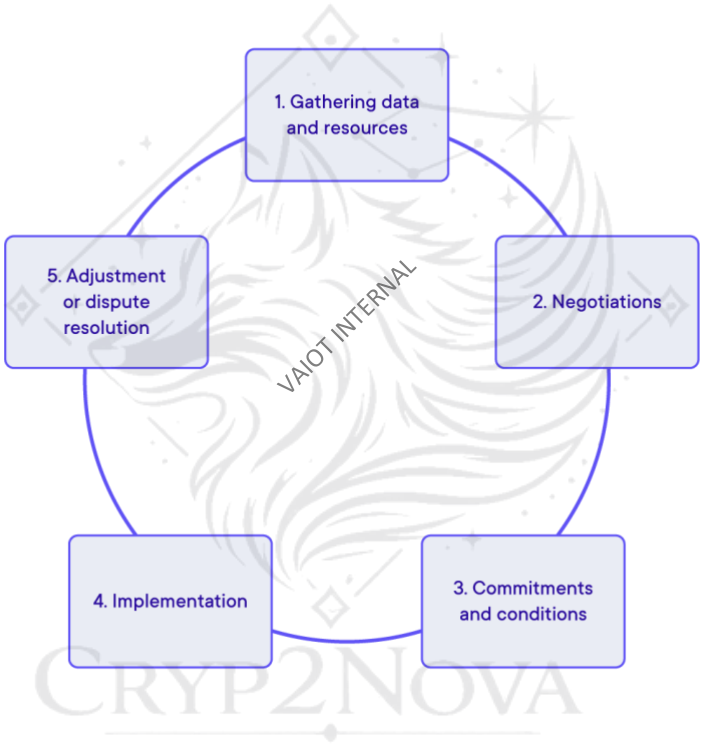



*Figure 6: Intelligent Contract's creation process*

Users will have several options for creating a new Intelligent Contract:

- manually via a step-by-step interface (GUI);
- a voice conversation with the Virtual AI Assistant (NUI)
- digitizing existing agreements with image recognition and Optical Character Recognition (OCR) mechanisms, with authoritative verification of the documents (as


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support to the options above).

**The manual step-by-step interface Intelligent Contract creation process** will guide the user through several questions to get all the necessary information for creating the contract, including legal requirements and possible execution rules. The Virtual AI Assistant is involved in the whole process, providing the user with suggestions and feedback about his choices, their impact on further activities related to the contract creation process, its execution, and the contract itself. During these steps, the Virtual AI Assistant is analyzing the provided data to create the right contract provisions and improve the overall contract security. The assistant also identifies patterns used by scammers and employs advanced fraud prevention mechanisms.

Another method of creating an Intelligent Contract with VAIOT is by **voice conversation with the Virtual AI Assistant.** During the conversation, the user specifies his expectations and requirements for the Intelligent Contract and provides the Virtual AI Assistant with all the necessary data to be inserted into the code. The Assistant verifies the obtained data and, if necessary, asks the user for clarification or confirmation. If there are some doubts regarding the proper contract or data classification, or there is a threat of misunderstanding, the Virtual AI assistant will provide the user with the possibility to choose correct options from the presented possibilities. During the whole process, the Virtual AI Assistant is responsible for securing the Intelligent Contract creation process, both on the legal and code level, including by analyzing the user's voice and checking for signs that could indicate acting against the user's will. Similarly, as in the other options for contract creation, the Virtual AI Assistant is also responsible for analyzing the entirety of contract data to prevent scams and frauds. For this type of contract, it is also possible to authenticate the user through his or her voice.

**The third method of contract creation consists of the digitization of existing paper contracts to make them digitally executable**. It is based on image recognition and Optical Character Recognition (OCR). The user creates an Intelligent Contract statement in a traditional form, using the contract template. The next step is image recognition carried out through the VAIOT mobile app or a web service. All data from the document is analyzed and



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classified with OCR, with VAIOT AI classifying the obtained text. The next step is understanding the language of the user's contract and processing it into a programming code. If VAIOT AI encounters any problems with understanding the contract or lacks some of the required data, the Virtual AI Assistant will guide the user to the end of the creation process as in the methods described above. At the same time, it is also possible to make changes or add more requirements to the contract.

In all the scenarios described above, each time the Virtual AI Assistant is unsure about the user's intentions, it will display all the possibilities for the next step in the contract creation process. This helps users with no experience in creating contracts by themselves – the AI Assistant will guide them throughout. At the end of the creation process, the user is always presented with a complete list of requirements, conditions, obligations, and execution rules, as well as an electronic document version of the contract and a short abstract of the created Intelligent Contract, where some corrections can be made.

Regardless of which method of contract creation is used, the VAIOT Virtual AI Assistant does all the low-level work. This means the creation of the Intelligent Contract code, its analysis and deployment.

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After the creation of the Intelligent Contract, the user has the option to print it out and/or to save the generated PDF in the archive.

### 3.2. VAIBC

VAIBC is VAIOT's proprietary distributed network technology, where Artificial Intelligence and Blockchain are inseparably linked. It introduces a modular structure allowing for the deployment of AI algorithms on-chain and allows them to participate in the consensus algorithm. It results in the enhancement of Blockchain use cases with the use of AI while keeping the immutability and security properties of this technology. Artificial Intelligence obtains data from the Blockchain, which is necessary for further development of the algorithms. Blockchain guarantees that AI algorithms settled on-chain cannot be manipulated/modified without network participants reaching a consensus. It also allows for the synchronization of data between the distributed versions of AI algorithms. The combination of AI and Blockchain



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ensures that the whole structure is fraud-resistant on the consensus level as well. In VAIBC, where Artificial Intelligence can take part in the generation of digital contracts, Blockchain acts as a "supervisor" monitoring all of AI's decisions, ensuring correctness and preventing external manipulation.

A Blockchain system that is not linked with Artificial Intelligence integrated with and operating directly on the distributed ledger is exposed to several risks. This could neutralize all the advantages of DLT by having one single, centralized point of failure. Validators' work would be useless as the process could be negated by one AI algorithm. There would also be no possibility to track changes in the algorithms, and so they could be manipulated freely from outside the network. Without an inseparable connection between these technologies, such a system could not be effective; therefore, VAIOT's design entails their mutual dependency.

### 3.2.1. VAIBC TECHNOLOGICAL DEPENDENCIES EXPLAINED

The VAIOT Platform assigns specific roles to both technical concepts: Blockchain as an underlying structure and AI as an essential factor for network consensus and contract generation.

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Blockchain may not seem to be an intuitive environment for AI. However, it is an immutable, cryptographically secure medium of storage, giving the advantages not available in centralized systems, e.g., AI algorithms distributed across the network.

Deep learning is a subset of machine learning which contributed significantly to the adoption and usage of AI. During the learning process, the algorithm usually utilizes unstructured or unlabeled data. It is essential to keep the quality of datasets. Furthermore, acquiring or obtaining data may prove to be an expensive exercise. Blockchain, being a secure medium of recordation, is set to be the crucial element for maintaining data integrity. Indisputable records on the network provide an advantageous structure for the development of datasets used in AI algorithms.

Below is a basic description of VAIBC technology:

- Blockchain is the underlying structure on which AI algorithms are settled.
- AI algorithms take part in the Blockchain consensus and obtain data from the Blockchain.



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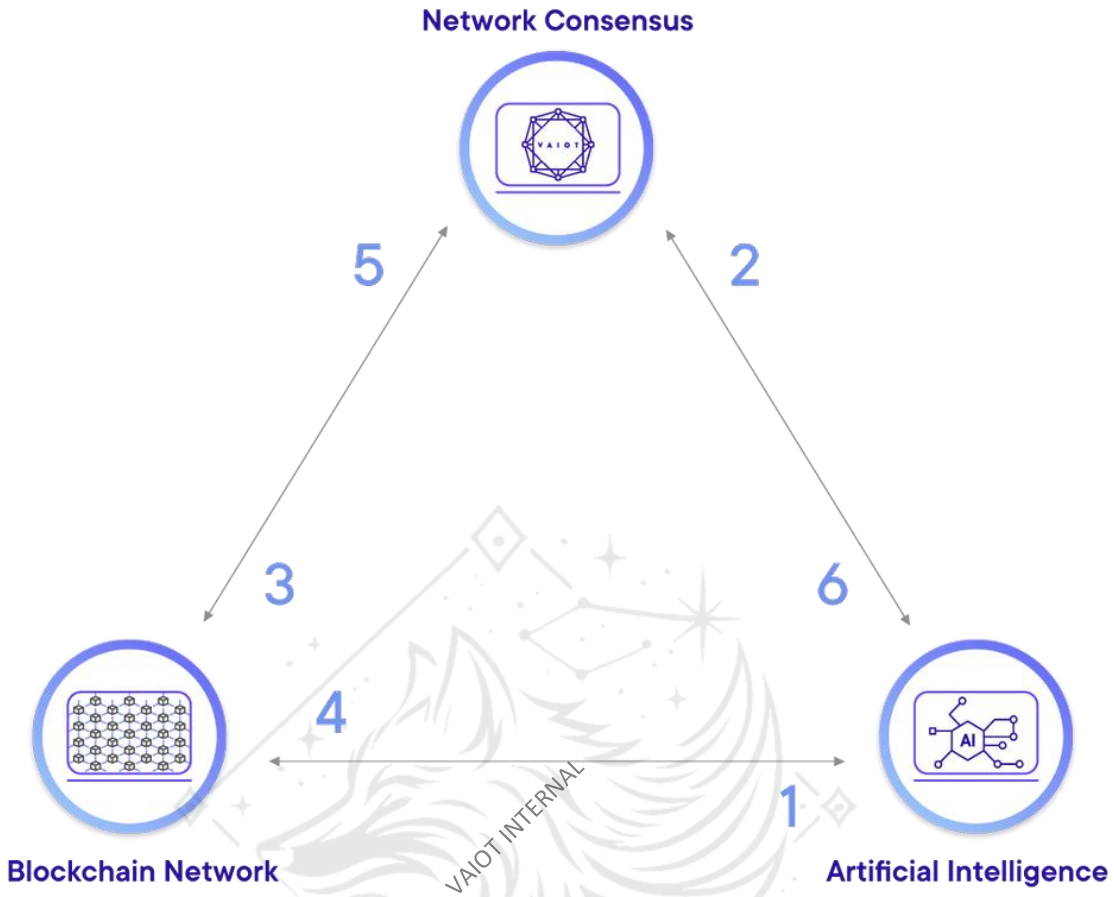



*Figure 7: VAIBC dependencies*

The points below describe the relations between VAIBC elements, as shown in the Figure above:

1. A specific AI algorithm is created on the Blockchain.
2. Network consensus is achieved with the use of AI algorithms.
3. New records are added to the Blockchain after the collaborative work of AI algorithms and POS nodes – ensuring data integrity on the platform.
4. AI algorithms settled on-chain extend the capabilities of applications deployed on the VAIOT's Blockchain.
5. Data is validated by the consensus mechanism and stored on the VAIOT's Blockchain.
6. AI algorithms can improve, based on validated data received from trusted sources.

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### 3.2.2. FURTHER INFORMATION ON THE VAIBC TECHNOLOGICAL DEPENDENCIES

**Basic rule:** Blockchain and AI are interdependent in such a manner that one could not operate without the other.

**In VAIBC AI requires BC due to the following factors:**

- AI algorithms are embedded in the software, and their states are stored on the Blockchain ensuring they cannot be modified without the network participants reaching consensus;
- AI uses the data from the Blockchain, including transaction data, analytical data regarding the network and data from applications based on VAIOT Blockchain;
- Blockchain as the underlying technology can provide the synchronization between all the distributed versions;
- AI operations will be processed on multiple distributed Blockchain nodes, guaranteeing the security of the whole process.

**BC needs AI due to the following factors:**

- AI takes part in the network consensus;
- using AI algorithms in VAIOT applications deployed on Blockchain opens new ways in which Blockchain technology could be used, like complex decision-making processes (Intelligent Contracts).

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### 3.2.3. INSEPARABLE CONNECTION IN VAIBC

As the AI algorithms are settled on multiple nodes and spread within the interconnected Blockchains, malicious intent in changing the AI code can be immediately detected and rejected. With each new block added to the VAIBC, new states of the AI algorithms are published to the network. The current and previous states of the AI algorithms are verified in the consensus process.

A fraudulent user intending to copy the AI algorithms code would have to deal with the system at two levels: VAIOT's open-source code as well as algorithms stored in so-called "black boxes" not accessible to the public. The latter is an added level of security for the processing of confidential information, like the provisions of the contracts from which the algorithms learn.



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In Intelligent Contracts, VAIBC allows not only for the immutability of the transactions (data and value exchange) but also for the immutability of the AI algorithms. It cannot be modified freely without the unambiguous decision of validators.

New iterations of learning processes are computationally heavy. Processing it on-chain would require a high level of incentive to provide the system with the required volumes of computing power. Such an incentive is ensured due to the VAI Tokens being used as rewards for contribution in the development of the AI. The AI algorithms subject to the learning process and serving Intelligent Contracts are mostly stored in the form of a "black box" on the dedicated interconnected Blockchain.

## 3.3. TECHNOLOGICAL BACKGROUND OF INTELLIGENT CONTRACTS

Intelligent Contracts are designed in a manner enabling their extensive use by organizations and individuals. To encourage users to use a given technology, it must be intuitive and offer simplification over previously used methods of contract execution. Intelligent Contracts achieve this by using NUI and VAIOT Code Generation Engine to cover the gap in programming knowledge, speech and image recognition for easy input of contract data, as well as the Virtual AI Assistant which helps the user in every step of contract creation, thus ensuring its correctness and safety.

### 3.3.1. AI-ENSURED USER EXPERIENCE

VAIOT uses AI technology to allow unique UX by providing an intelligent interface that suits the user's needs. The Virtual AI Assistant asks the user for basic contract parameters and then, using various built-in communication and display options, allows optimal user experience, and makes the contract creation process fully transparent. This approach ensures that the user will always be able to complete the contract and that the process will be intuitive at all times.

### 3.3.2. THE VAIOT CODE GENERATION ENGINE

The VAIOT Code Generation Engine (VCGE) is the crucial technology ensuring the usability of Intelligent Contracts. VCGE works as a proxy layer that connects users with the technology



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– VAIOT refers to the concept of a Ricardian contract[8]. According to the definition "a Ricardian contract is a method of expressing, encoding, and executing a contractual document through software, which means that it represents the recording of documents as contractually lawful, and then securely linking them to other ambits/systems, such as of accounting, for the contract to serve as the issuance of value." The main task realized by VCGE is to transform contracts, requirements, and inputs that are readable by humans (including voice conversation) to the code that will be stored and executed on the Blockchain. The input can be obtained i.a. from the users via the Virtual AI Assistant. The code contains information that is human-readable once the Intelligent Contract is generated (electronic, printable document).

Thanks to the VAIOT Code Generation Engine, the Issuer plans to gradually reduce the need for involvement of third parties such as developers, lawyers, settlement agents, notaries, couriers, proxies, translators, and other service providers.

### 3.3.3. VAIOT AND POST-QUANTUM CRYPTOGRAPHY

The VAIOT team has interpreted existing threats related to the dynamic development of quantum computers. Their current development status does not indicate any threats to the selected cryptographic algorithms in the time span of the next dozen or so years. The VAIOT team has selected algorithms and cryptographic protocols that are resistant to attacks using quantum computers. However, their demand for computing power in traditional equipment is too high. In connection with the above, the VAIOT team constantly monitors the development of new post-quantum cryptographic algorithms and quantum computers, so that at the right moment the algorithms currently used can be replaced by algorithms with the appropriate ratio of cryptographic power to the demand for computing power. Such a replacement is possible due to the modular structure of the VAIOT Platform.

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## 3.4. INTELLIGENT CONTRACTS AND THE KYC PROCEDURE

While the Issuer is a subject person in terms of applicable rules regulating anti-money laundering and counter financing of terrorism solely for the Initial VFA Offering it is proposing

[8] Usman W. Chohan, *What is a Ricardian Contract*, Discussion Paper Series: Notes on the 21st Century, 11.12.2017, p. 1.



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in virtue of this Whitepaper, VAIOT would like to ensure that it is creating a trusted ecosystem. As such, it shall subject certain users of its technology through a Know-Your-Client procedure (KYC procedure). Each VAIOT user, to make more advanced transactions (in terms of value), should be verified via the KYC procedure. The procedure can be started while creating a VAIOT user account or after the creation of such an account. The KYC procedure may also be requested by other transaction/contract participants to include an additional trust factor between the parties. By way of an example, in a transaction whereby a user is selling a car to another user, both users shall be verified through the KYC procedure to ensure transaction safety. Such a mechanism allows for more transparency and reduces the possibility of fraud.

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# III. INTRODUCTION TO THE BUSINESS MODEL

## 1. VAIOT'S BUSINESS MODEL IN A NUTSHELL

VAIOT has been created by industry leaders and experts with the mission of reshaping entire industries. Combining two pioneering technological trends, Blockchain and Artificial Intelligence (AI), VAIOT takes the lead in creating new ways of digitally accessing services and securely concluding legal agreements using a natural user interface. Furthermore, it acts as a broker and aggregator for various other products and services, enabling the opportunity of recognizing innovative solutions. This is all accomplished by introducing a Virtual AI Assistant that acts as an interface between users and the technology.

The VAIOT Platform will offer to the market business solutions focusing on two areas:

- AI-based legal services
- A novel, intelligent service distribution channel

The Issuer aims to enhance several industries, including, at first, insurance services, financial services, legal services, including computer-assisted legal research services, as well as Consumer to Consumer (C2C) commercial contracts and transactions. The business model assumes that the solution offered by VAIOT will be both B2B (VAIOT as a solution enhancing service distribution, sales, and customer service processes for companies) as well as B2C (VAIOT as an open application for the consumers to allow wider B2C and C2C transactions).

VAIOT will initially focus on:

I. Insurtech

VAIOT will allow customers to buy a variety of services, including, for example, car or travel insurance. Thanks to the AI Virtual Assistant, VAIOT will be able to support purchase decisions and sales processes, creating a brand new service distribution channel.

Business lines:

- Virtual AI Sales Assistant (VAIAssistant) - A new digital intelligent sales channel



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- Virtual AI Aggregator & Broker (Recommendation and Sales Assistant) - A new digital intelligent customer service tool

II. Legal Tech

The Virtual AI Legal Assistant will be offered to end-users in two different models – B2B and B2C. In the B2B model, the product will be offered to businesses that wish to benefit from technological support in their daily legal processes. Whether it's a law firm trying to cut costs and save the time of its employees, or a medium-sized company with a small, overloaded legal department, VAIOT's AI Legal Assistant will provide support in generating legal contracts based on its extensive database.

In the B2C model, VAIOT will offer legal services to individual customers, allowing them to save money on lawyers and vastly simplifying the process of preparing contracts. In that case, the Virtual AI Legal Assistant will also act as a tool for the consumers to allow wider B2C and C2C transactions, supported and secured by VAIOT's Intelligent Contracts, both traditional, printable and digital, secured by Blockchain.

Business line:

- Virtual AI Legal Assistant (VAILawyer) - A new digital intelligent legal assistant with the capability to generate contracts and conclude secure transactions.

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**The medium of settlement accepted in VAIOT solutions:**

- Fiat money – at first, this will be the primary source of settlement on the VAIOT Platform until the milestone set for Q3 2021 relating to the **migration to the proprietary Blockchain solution** is achieved.
- VAI Tokens – once the **migration to the proprietary Blockchain solution** is completed and all the services are up and running, the Company will also implement the mechanism for settlement in VAI Tokens, allowing the Tokenholders to utilize VAI Tokens as a means of settlement for the services offered on the VAIOT Platform. Other recognizable digital assets such as Ethereum or Tether will also be accepted.

VAIOT is not limited only to the currently established strategy. It can have many diverse applications in different industries. The Company offers many possibilities to reshape a variety of business operations across the entire economy



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With its advanced AI, VAIOT will allow a significant increase in the efficiency of business processes and reduce the amount of human involvement. Let us imagine how we can reshape the insurance or banking sectors, allowing people to make deals over Blockchain with the Virtual AI Assistant via a voice user interface, creating secure and transparent Intelligent Contracts. If a VAIOT user wishes to borrow money, he would ask VAIOT for the best possible offer, complete the process via a conversation with the Virtual AI Assistant, sign a digital contract and obtain the funds with all the execution rules and terms of the loan written in the immutable Blockchain ledger. This is just a simple example. The insurance sector offers just as many possibilities. If a VAIOT user requires insurance for a car he just purchased, he will simply provide VAIOT with the necessary details; VAIOT will check both the car and the user as well as their history and, based on a set of factors, will offer the best possible deal with the rules of execution coded into the Blockchain. Insurance companies might use VAIOT for storing data about their customers to calculate their insurance fees better. Thanks to VAIOT AI, there will be new capabilities for fraud detection, which should result in increased revenues for companies using our technologies. In addition, such insurance companies will be able to offer a reduction in insurance premiums for their loyal and trustworthy customers. VAIOT will ensure full transparency of the process to secure the interest of both the user and the financial institution. With API, on the other hand, VAIOT will be able to integrate with the leading insurance, financial, rental, and other platforms.

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## 2. MARKET OVERVIEW

Please find below the overview of the market size of the main technologies developed and used by VAIOT.

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### 2.1. ARTIFICIAL INTELLIGENCE (AI) MARKET OVERVIEW

In computer science, AI is intelligence demonstrated by machines, contrary to the natural intelligence displayed by humans. Leading AI textbooks define the field as the study of "intelligent agents", meaning any device that perceives its environment and takes actions that maximize its chance of successfully achieving its goals. Colloquially, the term "Artificial Intelligence" is often used to describe machines (or computers) that mimic the cognitive functions typically associated with the human mind, such as learning and problem-solving. Improving customer experiences by strengthening sales, customer service, and marketing with



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more significant insights is one of the primary catalysts driving AI and machine learning adoption today. Information provided by Statista indicates that, if one adopts a compound annual growth rate (CAGR) of 74% for the period 2017–2022, the global AI market size would expand from 0.8 B USD in 2017 to an impressive 7.7 B USD by 2021. Furthermore, according to Allied Market Research, AI's market value is projected to reach 169 B USD in 2025. IDC predicts spending on cognitive and AI systems will reach 77,6 B USD in 2022, more than three times the 24 B USD forecast for 2018. The cognitive and AI systems market will achieve an impressive 37.3% CAGR from 2017-2022, according to their analysis. The software will be both the most significant and fastest-growing technology category throughout the forecast, representing around 40% of all cognitive/AI spending with a five-year CAGR of 43.1%. The use cases that will see the fastest investment growth over the 2017–2022 forecast are pharmaceutical research and discovery (46.8% CAGR), digital assistants for enterprise knowledge workers (45.1% CAGR), and intelligent processing automation (43.6% CAGR). VAIOT, with its current product portfolio, represents inter alia a section of the AI market defined as expert shopping advisors & product recommendations with 46.5% CAGR. AI could contribute up to 15.7 T USD to the global economy in 2030, more than the current output of China and India combined, resulting in global GDP growth of 14%. 6.6 T USD is likely to come from increased productivity, while 9.1 T USD is expected to come from consumption side effects.

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## 2.2. BLOCKCHAIN TECHNOLOGY MARKET OVERVIEW

Blockchain is a growing list of records, called *blocks*, that are linked using cryptography. Each block contains a cryptographic hash of the previous block, a timestamp, and transaction data. By design, a Blockchain is resistant to modification of the data. It is "an open, distributed ledger that can record transactions between two parties efficiently and in a verifiable and permanent way." For use as a distributed ledger, a Blockchain is typically managed by a peer-to-peer network collectively adhering to a protocol for inter-node communication and validating new blocks. Once recorded, the data in any given block cannot be altered retroactively without the alteration of all the subsequent blocks, which requires consensus of the network majority.

The Blockchain market is expected to grow rapidly owing to numerous benefits that it provides, such as eradication of the requirement for a financial institution to validate



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transactions, reduction in duplicative recordkeeping, eliminating reconciliation, minimizing error rates, and facilitating faster settlement. With the use of this technology, many databases could become universal, thereby allowing multiple institutions to use at the same time in order to bring various systems closer together and drastically increase efficiency.

The increasing demand for this technology is visible across various industries, such as financial services, consumer or industrial products, technology, media and telecom, healthcare, transportation, and the public sector. These are primarily responsible for driving the growth of the market. Cisco reports that by 2027, 10% of the global GDP is likely to be stored on Blockchain. Furthermore, Gartner predicts that by 2025 the business value added by Blockchain will rise by more than 176 B USD. According to figures provided by Statista, the global Blockchain technology market stood around 0.3 B USD in 2017 and is expected to show a CAGR of 64%, resulting in 2.3 B USD by 2021.

### 2.3. INTELLIGENT VIRTUAL ASSISTANT MARKET OVERVIEW

The Intelligent Virtual Assistant (IVA) is a next-generation software solution that facilitates user interaction with PCs through the internet, SMS, messenger, and other interfaces. IVA systems use various interaction methods, which include text-to-text, speech-to-text, text-to-speech, and speech-to-speech, among others, to assist users in executing their respective tasks. The global IVA market has exhibited significant growth in the recent past.

Presently, enterprises are focused on adopting cost-effective methodologies to provide efficient customer services. IVA is a cost-effective technology, which assists multiple customers with gaining access to service quickly and efficiently. IVA also allows instant responses from the system, improved data collection, and reduction in the dependency on manual customer support. Consequently, IVA solutions are being implemented across various organizations, such as banks, e-retailers, and healthcare institutions, among others. Increasing smartphone penetration, growing adoption of IVA software in large enterprises, and the inclusion of natural language understanding technology are the key factors driving the global IVA market. IVA facilitates user interaction with smartphones and other devices such as in-car infotainment systems, PCs, and laptops to access any kind of required information such as payment procedures, doctor's availability, and appointments, navigation, news, and entertainment, to name just a few. The global IVA market is expected to reach 3.6 B USD by 2020, registering a

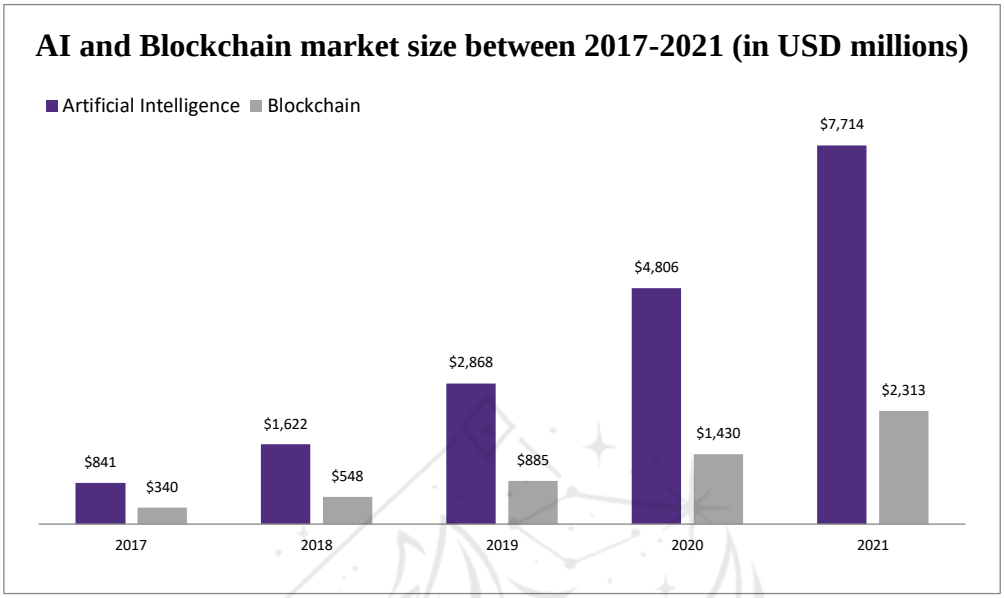


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CAGR of 35.2% during the 2015–2020 forecast period. Text to speech technology emerged as the largest segment in 2018 and is estimated to generate over 15.37 B USD in revenue by 2025. Also by 2025, the global IVA market size is expected to reach a total value of 25.63 B USD. It

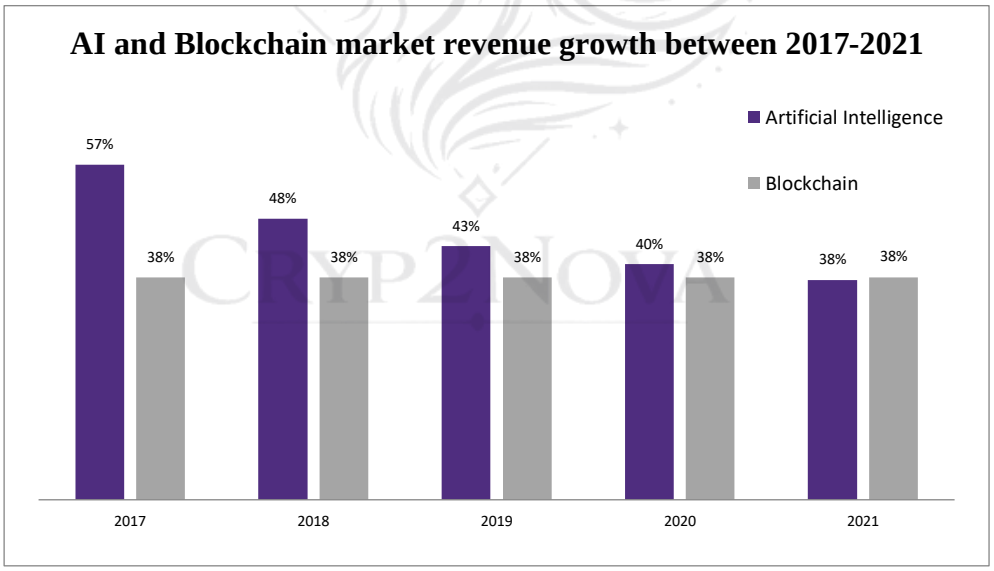



is anticipated to expand at a CAGR of 40.4% during the forecast period.

9

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*Figure 8: AI and Blockchain market size between 2017-2021 (in USD millions)*




[9] Source: *Statista*.





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*Figure 9: AI and Blockchain market revenue growth between 2017–2021*

## 3. OVERVIEW OF THE VAIOT REVENUE MODEL

The Company intends to introduce the innovative VAIOT Platform gradually over the coming years. The VAIOT Platform consists of three main technological elements: Intelligent Virtual Assistant, Artificial Intelligence, and Blockchain. Different configurations of those technologies will be offered in line with market demand. The general strategy is to offer products in two models:

- B2B (VAIOT offered as a service enhancing sales and customer service processes for companies),
- B2C model (VAIOT offered as an open application for the consumers to allow a wider array of B2C and C2C transactions).

To diversify the portfolio of products and services provided by VAIOT, we have separated three independent VAIOT products. These are:

- Virtual AI Sales Assistant (VAIAssistant),
- Virtual AI Aggregator & Broker (Recommendation and Sales Assistant),
- Virtual AI Legal Assistant (VAILawyer); this includes support for regular transactions utilizing Intelligent Contracts.

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### 3.1. VIRTUAL AI SALE ASSISTANT (VAIAssistant)

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The VAIAssistant is a multipurpose solution offering a novel, digital, intelligent sales channel for various businesses and various industries.

At the product initiation stage, the focus is mainly on the insurance sector. The VAIAssistant enables users to sell designated insurance products through an innovative sales channel, coupled with the benefits of reduced sales-processing costs and an advanced, easy-to-use digital platform.

[10] *Ibid.*



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The VAIAssistant will be very useful in the case of insurance contracts that do not require human input, such as travel or car insurance. This technology can help reduce the time allotted to arrange insurance contracts while also lowering the chance of making any errors.
This use of VAIAssistant in the insurance sector is just one example. The Company intends to introduce this technology across other industries as well.

**Product details**

- Tailor-made mobile app
- Ideal for companies seeking to tap into new sales channels
- An innovative way to establish a mobile customer service channel

**Expected Market Date**

Q2 2021

**Main Target Market**

Primary target: at product initiation, the UK motor insurance market as well as German, Austrian, and Swiss (together referred to as DACH) motor insurance markets (mainly MTPL and ODC insurance).

**Model of the product and services offered – layer 1 (VAIOT perspective)**

B2B (contracts)

**Model of the product and services offered – layer 2 (Client perspective)**

B2C (services offered by the Clients to their Customers)

**Source of revenue**

B2B contracts will result in three main sources of revenue: implementation fees, maintenance fees, and commission fees.

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**Business line description**

AI technology business use cases obtaining the most funding in 2019–2020 are automated customer service agents (4.5 B USD worldwide) and sales process recommendation and automation (2.7 B USD)[11].

The development of VAIOT products is a part of the existing spending trend for these types of solutions.

Starting from Q2 of 2021, the Issuer plans to begin sales of the VAIAssistant product in the insurance market. The developed product will be a dedicated solution for insurance companies, enabling them to sell selected insurance products using a digital sales platform. The main advantage of using VAIAssistant for insurance companies is a significant reduction in the costs associated with sale processes as well as an innovative, easy to use and customer-friendly sales channel. Depending on the type of insurance and sales channel, the costs of selling insurance can range from a few to several dozen percents of the value of the insurance premium. The use of VAIAssistant will allow companies to reduce the costs associated with the sales process and open an entirely new sales channel for their products. Sales of several types of insurance do not require human assistance, and customers often expect such types of insurance to be easily obtainable. These include, among others, car insurance and travel insurance. VAIAssistant can sell these types of insurance fully autonomously. From the consumer point of view, there is a significant simplification of the process, as the whole transaction can be concluded in a natural way through a conversation. This reduces the time needed to conclude an insurance contract and eliminates the possibility of making a mistake, with a Virtual AI Assistant also offering a set of additional benefits that can be added to the product over the years.

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## 3.2. VIRTUAL AI AGGREGATOR AND BROKER

[11] Source: *Worldwide Artificial Intelligence Spending Guide.*



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The VAIOT Recommendation and Sales Assistant act as an innovative aggregator and digital broker in the form of a widely accessible application for the consumer. Once again, VAIOT initially concentrates solely on the insurance sector. However, the products can be easily adapted to the needs of other industries.

The application collects various offers from a number of service providers; this information is screened by the AI, which then processes recommendations for the user.

The primary revenue source for this product will be commission on sales, proportional to the value of the transaction.

**Product details**

- B2C mobile app
- Provides consumers with a comparability platform when buying products
- Comparison is made between different service/product providers
- Voice interface and AI-backed ICs developed by VAIOT are used throughout this Business Line

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**Expected Market Date**

Q3 2021

**Main Target Market**

Primary target: the UK and DACH countries' motor insurance markets.

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**Model of the product & services offered**

B2C

**Source of revenue**

- The average commission fee per single contract on the value of the transaction concluded (e.g. commission fee on motor insurance sold via VAIOT app);



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- The average commission fee on sales of other products/services, both complementary (e.g. car tires, spare parts, maintenance and cleaning products, travel insurance), and unrelated;
- Revenue from in-app advertisements and recommendation system.

**Business line description - innovative aggregator and digital insurance broker**

Insurance policies were among the first products to be successfully sold or brokered by aggregators. In many major European markets, insurance products still account for more than 75% of aggregators' total revenue. Also, as per the estimates from McKinsey, more than 50% of the sales of online insurance were accounted for by aggregators in Europe in 2018.

Due to the attractive gross profit margin (~30% to 40%), that is experienced by the European insurance aggregators, and with most of the aggregators being the connection point between the customers and the insurers in a majority of the sales, the online insurance market is expected to grow considerably, as the number of aggregators in the online insurance market in Europe has been steadily increasing in recent years.

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The technological disruption in the European insurance industry due to the evolution of Insurtech companies is increasing the usage of third-party price-comparison websites, as consumers look for greater convenience than in the traditional model. For instance, insurance buyers in the United Kingdom are the most digitally influenced, as approximately 75% of new motor insurance policies are bought based on online price comparison websites and through online aggregators. Also, travel insurance buyers in the United Kingdom are most likely to research online, and 70% of them buy through online channels. Price comparison websites and insurance company websites have a stronger influence on the buyers of non-life insurance. Price comparison websites make it easier for customers to choose commoditized insurance products based on price and to compare the scope of such products.

VAIOT Recommendation and Sale Assistant is a widely accessible consumer application for aggregating offers of various service providers, utilizing AI for the recommendation process. The main revenue source for this product would be a commission based on the value of the transaction concluded.



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### 3.3. VIRTUAL AI LEGAL ASSISTANT

The VAILawyer will be provided to end-users, both businesses and consumers, in the form of a well-designed application utilizing multiple, AI mechanisms, such as Natural Language Processing (NLP), thus enabling exceptional user experience. Users of the application can utilize a voice user interface to request and obtain certain legal services, such as contract preparation, delivered by VAIOT's Intelligent Contracts (ICs)

Users of the Virtual AI Legal Assistant will be provided with the required contract in very little time at a significantly lower cost than when opting for traditional contract services. This service would then act as a platform allowing users to conduct safe, Blockchain-based transactions which are also legally secure.

**Product details**

- B2B/B2C/C2C mobile app
- Enables consumers such as micro-enterprises, private entrepreneurs and natural persons, to create ICs
- Enables businesses and consumers to utilize legal services, including computer-assisted legal research services to support, e.g., daily operations of legal departments
- The creation of ICs is aided via the utilization of a voice interface combined with a broad Artificial Intelligence (AI) acting as a private legal assistant
- The ICs created could take the form of a civil contract which can be simultaneously negotiated in real time between the parties involved
- Another use-case would be the drafting of documents, e.g. testaments and other declarations of intent

**Expected Market Date**

Q2 2023

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**Model of the product and services offered**

B2B, B2C, C2C

**Source of revenue**

- Average commission fee per contract;
- The license fee for the B2B application (VAILawyer as a computer-assisted legal research solution).

**Business line description**

We understand that a genuinely complicated contract may require specialized legal knowledge and competence. Since people who write smart contracts often do not specialize in legal matters, various problems may occur. VAIOT's Intelligent Contracts employ state-of-the-art AI technology supported by high-quality legal databases to guide the contract creation process. The aim is to ensure the security of Intelligent Contracts on both the technological and legal level, which means analyzing hundreds of different options and scenarios to make sure that the contract is legally sound and will deliver the expected value. We see AI as a technology that will gradually allow the analysis, preparation, negotiation, and execution of such contracts flawlessly. VAIOT will provide the end-user with an Intelligent Contract, utilizing a simple user interface available on the user's electronic device, creating a binding agreement. The whole process is supported by an advanced AI that serves as a personal contract assistant. The end-user will need to define the requirements, provide basic data via voice or text, and communicate with the Virtual AI assistant via the user interface. VAIOT's AI will review its legal database, prepare a contract tailored to the needs of the user, and make it secure thanks to Blockchain.

Virtual AI Legal Assistant (VAILawyer) will be offered to end-users in two different models – B2B & B2C. In the B2B model, the product will be offered to companies requiring intelligent and technological support for their daily business processes. Whether it's a law firm trying to cut costs and save the time of its employees or a medium-sized company with a small, overloaded legal department, VAIOT's Virtual AI Legal Assistant will provide support in generating legal contracts based on its significant legal database and AI capabilities. In the B2C



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model, VAIOT will offer legal services to regular consumers allowing them to save money on expensive legal services and simplifying the process of contract preparation. With VAIOT AI Legal Assistant, the consumer will get the required contract in a matter of minutes and at a lower cost. Thanks to these qualities of VAILawyer, consumers will now be able to apply formal, professional, tailor-made legal contracts to those cases of human interaction that previously could not afford such solutions (with second-hand buy/sell transactions outside of regulated marketplaces being just one example of such application). The Source of revenue in the B2B model will be licenses to use the software. In the B2C model, the user will pay per contract generated.

## 4. SUMMARY OF VAIOT'S BUSINESS LINES

| | Virtual AI Sale Assistant – Business line 1 | Virtual AI Insurance Aggregator and Broker – Business line 2 | Virtual AI Legal Assistant for Consumers – Business line 3 |
|---|---|---|---|
| **Product details** | ○ Tailor-made mobile app<br>○ Ideal for companies seeking to tap in new sales channels<br>○ Can be an innovative way of how to establish a mobile channel of sales. | ○ B2C mobile app<br>○ Provides consumers a comparability platform in buying insurance products, specifically those allowed by EU insurance for Motor Third-Party Liability (MTPL).and Optional Damage Cover (ODC).<br>○ Comparison is made between different insurers.<br>○ Voice interface and AI-backed ICs developed solely by VAIOT are used throughout this Business Line. | ○ B2B/B2C/C2C mobile app<br>○ Enables consumers and businesses such as private entrepreneurs, micro-enterprises, and companies to generate ICs, both traditional agreements and blockchain contracts.<br>○ The creation of ICs is aided via the utilization of voice interface combined with a broad Artificial Intelligence (AI) performing as the private legal assistant.<br>○ The ICs created could take the instance of a civil contract, which can be simultaneously negotiated in real time between the involved parties.<br>○ Another use-case can be the drafting of documents such as, testaments. |
| **Expected market date** | ○ Q2 2021 | ○ Q3 2021 | ○ Q1 2022 |
| **Main target market** | ○ Primary target: At product initiation, UK motor insurance market and Germany, Austria, and Switzerland (together referred to as DACH) motor insurance market. | ○ Primary target: UK motor insurance market and DACH countries motor insurance market. | ○ At product initiation, the UK market for second-hand buy/sell of vehicles and other types of C2C legal contracts. |
| **Source of revenue** | ○ B2B contract which will result in three main sources of revenue: implementation fee, maintenance fee and commission fee. | ○ Average commission fee per single MTPL contract on the value of the transaction concluded.<br>○ Average fee per ODC contract on the value of the transaction concluded. | ○ Average commission fee per legal contract. |

*Figure 10: Overview of VAIOT's business lines*



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# IV. VAIOT'S BLOCKCHAIN

## 1. INTRODUCTION

The Issuer is developing its own proprietary Blockchain based on Polygon Edge and will be integrating a set of blockchain functionalities with the Polygon mainnet, whose official launch is planned at a further stage of the VAIOT Project. The target, proprietary Blockchain solution, will be combined with Artificial Intelligence algorithms to create VAIBC technology.

For the first stage of the VAIOT Project and the Initial VFA Offering, the ERC-777 standard will be used to establish the first version of the VAI Token. At a later stage of the VAIOT Project, VAI Tokens will be made available on the Polygon Mainnet.

This section of the Whitepaper describes:

- the chosen Ethereum standard;
- the migration process from the ERC-777 token to the token based on the proprietary Blockchain solution;
- the said Polygon-based proprietary solution which shall be the underlying technology after the migration process;

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Creating a fresh, proprietary solution gives us a chance to address some drawbacks that existing Blockchains have suffered from. Those drawbacks will be gradually reduced with the implementation of the new functionalities of the VAIOT Platform.

### 1.1. BITCOIN DRAWBACKS

Due to the widespread success of Bitcoin, which was the first decentralized cryptocurrency implemented in practice thanks to solving the problem of fault-tolerant distributed computing, Blockchain technology was introduced to the public. This solution without a doubt was a giant leap, but as time showed, improvements can be made to the concept and the way it is translated into practice. Bitcoin relies on proof-of-work to secure consensus, which requires massive amounts of electricity that comes with a significant daily cost. This has a tremendous impact



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on the environment, as most bitcoin miners are located in regions that rely heavily on coal-based power. To make matters worse, all this computing power is poured into evaluating a single function with no utility other than securing consensus. The protocol has a low throughput of several transactions per second and a slow double-spending prevention mechanism, which requires up to an hour to reasonably confirm a payment. In theory, the network is distributed and allows anyone with a CPU to participate, but in practice, consensus is in the hands of a few large data centers running specialized mining equipment. Furthermore, there is no real solution to the problem, and continuous expansion of the Blockchain can lead to ever-increasing numbers of ordinary people being excluded from participation in the network. As the codebase is very monolithic, the distinction between the three layers of networking, consensus, and application does not exist, which completely disables the usage of light clients in the context of custom applications, due to the inability to exclude invalid transactions. Therefore, developing decentralized applications based on Bitcoin is hindered by security, scalability, and capability flaws. Several partial solutions offer some mitigation, as the Lighting Network, but they are limited and unable to address the whole problem.

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### 1.2. ETHEREUM DRAWBACKS

The goal of Ethereum is to enable building decentralized applications in a rapid manner (tasks that are difficult or outright impossible to accomplish on the Bitcoin Blockchain can be completed with a few lines of code on the Ethereum Blockchain). The application layer is turned into the Ethereum Virtual Machine with the ability to execute programs called smart contracts, allowing usage of light clients and making data easy to access. Due to fast block time, payments can be reasonably confirmed in a few minutes. Despite these features, due to the same consensus type, Ethereum inherits almost all the flaws of Bitcoin: low scalability, imperfect decentralization, low throughput of 15 transactions per second on average, high electricity consumption, and huge computing power utilized solely to secure consensus. Poor Blockchain performance also affects decentralized applications that compete for limited resources. The Ethereum programming language is less flexible and not as advanced in capabilities as modern programming languages. Work is in progress to improve scalability and throughput, and even change consensus type, but significant changes require a long time.



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# 2. POLYGON [12]

## 2.1. OVERVIEW

Polygon is the first well-structured, easy-to-use platform for Ethereum scaling and infrastructure development. Its core component is Polygon SDK, a modular, flexible framework that supports building and connecting two major types of solutions.

1. Secured chains (aka Layer 2 chains): Scaling solutions that rely on Ethereum for security instead of establishing their own validator pool. Polygon will support other major Layer 2 solutions such as Optimistic Rollups, zkRollups, Validium, etc, thus basically becoming a one-of-a-kind "Layer 2 aggregator".

   Secured chains are a good fit for (1) applications that require the highest level of security and (2) startups, i.e. young projects and communities (unable to establish a sufficiently decentralized and secure validator pool.

2. Stand-alone chains (aka Sidechains): Sovereign Ethereum sidechains, normally are fully in charge of their own security, i.e. with their own validator pool. Stand-alone chains offer the highest level of independence and flexibility, with the tradeoff of a normally lower level of decentralization and security. These chains' architecture can be adjusted so they at least partially inherit security from Ethereum. One good example of such architecture is the aforementioned Matic POS Chain which uses Ethereum for validator staking and periodical finality checkpoints.

   Stand-alone chains are often a good fit for (1) enterprises, (2) projects that do not require the highest level of security, and (3) established projects with strong communities (capable of running a sufficiently decentralized and secure validator pool).

## 2.2. FEATURES

- **ETH Compatibility:** Industry dominance, established tech stack, tools, languages

[12] Section IV.2: POLYGON is based on:
Source: *https://wiki.polygon.technology/docs/pos/polygon-architecture, accessed 17.04.2023.*



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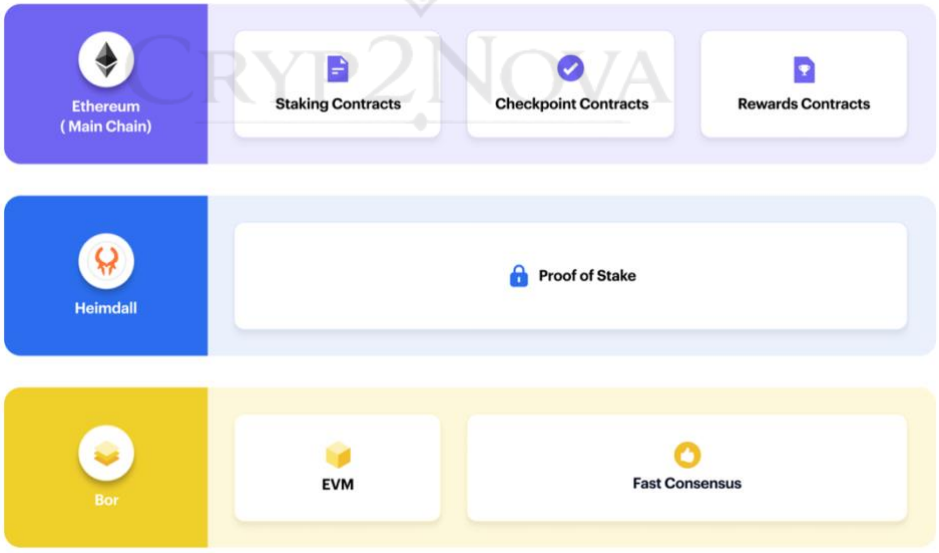
standards, enterprise adoption.

- **Scalable:** dedicated blockchains, scalable consensual algorithms, custom Wasm execution environments.
- **Modular:** High customizability, extensibility and upgradeabilitym short time-to-market community collaboration.
- **Interoperable:** Native support for arbitraty message passing (tokens, contact calls etc.), bridges to external systems.
- **Sovereignty:** Dedicated throughput/resources fully customizable tech stack, sovereign governance.
- **Secure:** Modular "security as a service", provided either by Ethereum or a pool of professional validators.
- **User Experience:** "zero gas" transactions, instant (determinates) transaction finality, friendly UX
- **Developer Experience:** Equivalent to Ethereum, no protocol level knowledge required, no token deposits, fees or permissions.

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### 2.3. STRUCTURE

Polygon architecture consist of three layers:






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*Figure 11: Polygon architecture*

1. Ethereum layer (Main Chain)

   Polygon chains can use Ethereum to host and execute any mission-critical component of their logic. The Polygon system uses a set of staking management contracts on the Ethereum mainnet that enable and support the Proof of Stake (PoS) mechanism on Polygon.

2. Heimdall (Validation Layer)

   Heimdall layer (proof of stake validation layer) manages validators, block producer selection, spans, the state-sync mechanism between Ethereum and Matic and other essentials aspects of the system. It handles the aggregation of blocks produced by Bor into a Merkle tree and publishing the Merkle root periodically to the root chain. The periodic publishing of snapshots of the Bor sidechain are called checkpoints. Checkpoints are important, because they provide finality on the root chain and proof of burn in withdrawal of assets.

   An overview of the process:

   - A subset of active validators from the pool is selected to act as block producers for a span. These block producers are responsible for creating blocks and broadcasting the created blocks on the network.
   - A checkpoint contains the Merkle root hash of each block produced within any specified time. The Merkle root hash is verified by all nodes.
   - A selected proposer from the validator set is responsible for collecting all signatures for a particular checkpoint and committing the checkpoint on the Ethereum mainnet.
   - Depending on a validator's stake ratio in the total pool, they may be responsible for producing blocks and suggesting checkpoints.

3. Bor (Block Producer Layer)

   Bor is Polygon's sidechain block producer layer – the entity responsible for aggregating transactions into blocks. Currently, it is a basic Geth implementation with custom

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changes done to the consensus algorithm.

Block producers are chosen from the Validator set and are shuffled using historical Ethereum block hashes for the same purpose. Blocks are produced at the Bor node, and the sidechain VM is EVM-compatible. Blocks produced on Bor are also validated periodically by. Heimdall nodes, and a checkpoint consisting of the Merkle three hash of a set of blocks on Bor is committed to Ethereum.

## 2.4. SECURITY MODELS

Polygon has three types of security models that developers can use for building their dApps.

1. Proof of Stake security
2. Plasma security
3. Hybrid (Plasma + PoS)

### 2.4.1. Proof of stake security

Proof of Stake (PoS) security is provided by both Heimdall and Bor layer which is built on top of Tendermint. The Polygon system uses a set of staking management contracts on Ethereum, as well as set of incentivized validators running Heimdall and Bor nodes that enable and support the Proof of Stake (PoS) mechanism. These mechanisms implement the following features:

- the ability for anyone to stake MATIC tokens on the Ethereum smart contract and join the system as a validator,
- Earn staking rewards for validating state transitions on Polygon.

Polygon has a fast finality layer which by using checkpoints finalizes the sidechain state. The fast finality helps to cement sidechain state. The EVM compatible chain has few validators and faster block time with high throughput. Scalability is more important than high degrees of decentralization. Through a huge validator set and thus great decentralization, Heimdall makes sure that the final state commit is impenetrable and passes.

### 2.4.2. Plasma Security

Polygon provides “Plasma Guarantees” with respect to various attack scenarios. Two main cases considered are:



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- Chain operator (or in Heimdall layer) is corrupt,
- The user is corrupt.

If a user's assets on the plasma chain have been compromised, they need to start exiting. In such situation, Polygon enables users to leverage constructions on the rootchain smart contract.

Security offered by Polygon's Plasma relies on Ethereum's security. Users' funds are only at risk when Ethereum crashes.

2.4.3. Hybrid

Polygon provides also a Hybrid approach that developers can follow building their dApps, which includes both Plasma and Proof of Stake guarantees.

As example, a developer building a gaming dApp can deploy smart contracts defining the game logic on Polygon sidechain, hence guaranteeing Proof of Stake security to these contracts. On the other hand, the ERC20 tokens transfer to rewards players can be secured with Plasma guarantees and fraud proof embedded in Polygon's root chain contracts.

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## 3. ETHEREUM TOKEN [13]

### 3.1. ERC-20 OVERVIEW

The ERC-20 token standard is probably the most common and best known Ethereum technology standard. It is the result of the twentieth improvement suggestion in the Ethereum Improvement Proposals (EIP) repository, a collection point for improvement proposals. Due to the ERC-20's ability to quickly and easily create its own tokens based on the Ethereum Blockchain, it became the most popular token standard in recent years, significantly contributing to the popularity of both Ethereum and ICO. The Smart Contract of this token standard usually defines the following details, which should inform the user about the token:

[13] Section IV.3: ETHEREUM TOKEN is based on:
Source: *Ethereum EIPs documentation*, https://eips.ethereum.org/EIPS/eip-777, accessed 30.06.2020.
*Source: OpenZeppelin token documentation*, https://docs.openzeppelin.com/contracts/2.x/tokens.html, accessed 18.12.2019.
Source: OpenZeppelin ERC-777 contracts GitHub repository, https://github.com/OpenZeppelin/openzeppelin-contracts/tree/master/contracts/token/ERC777, accessed 18.12.2019.



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- the token name under which the token contract is stored;
- the token abbreviation, which usually consists of 3-4 letters;
- the number of decimal places in which the token is stored;
- a list of the token holders and their token balances.

The total amount of available tokens is derived from the sum of the account balances. The possibility to increase or decrease this amount is given by the token standard: either by the Smart Contract distributing new tokens (mint) or by the Smart Contract taking the tokens from the balance sheets and destroying them (burn).

The ERC-20 tokens can be moved between different Ethereum addresses. Nevertheless, there is a fundamental difference to regular ether transactions on the Ethereum Blockchain, because an ***ether transfer*** consists of a ***transaction field*** for the transaction amount and a ***data field*** for additional data.
However, in the ***token transaction***, information about the number of tokens to be sent is in the second field. For this reason, transfers between the addresses of two parties are possible, but using the token as a trigger for a function of another Smart Contract does not work. In this way, if a user sends a transaction to a Smart Contract, and this is not recognized by the Smart Contract, the ethers from the transaction are irrevocably lost.

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### 3.2. ERC-777 OVERVIEW

ERC stands for Ethereum Request for Comments, and ERC-777 is one of many proposals made by the community in the EIP repository. It represents an evolved token standard, which improved on the flaws of past standards like ERC-20, which is still used by the majority of Ethereum-based projects. This standard is backward compatible with older standards.

ERC-777 is fully compatible with the Ethereum network, so it can be sent to any Ethereum address and received if the user is in possession of both the public and private keys (excluding exchanges which might not support the given token or refuse to unlock funds). The chosen standard puts the VAI Token ahead of the competition, the majority of which uses the ERC-20 standard. One of the advantages of the chosen solution is that it will prevent the user from


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sending funds to a non-existing wallet or contract address. Hitherto it has not been uncommon for users to send their funds to an incorrect address, and in such situations, due to the immutable nature of Blockchain, the funds would be lost. That is not the case under the ERC-777 standard.

### 3.3. ERC-777 OVER ERC-20

The first important innovation in ERC-777 is the definition of a ***send ()*** function. The token transaction now consists of an ***amount*** field, ***data bit*** field, and a similar ***operatorData*** field. Thus, the parameters can be freely selected again by the token user and the token operator in order to forward data to the recipient.

ERC-777 introduces "operators" instead of allowance mechanisms. "Operators" are trustworthy Smart Contracts which can move tokens in the name of the user. They can be authorized or canceled by the users of the ERC-777. Token contracts can be improved afterward by giving the token system additional properties later, such as a check processor, recovery services, or a membership payment manager. Introduction of hook preventing lock ups (***tokenReceived*** hook) makes it possible to control Smart Contracts as well as addresses for the receipt of tokens and to reject them if necessary. It enables the token recipient to automatically execute a code when a token arrives. When, for example, a user accidentally sends tokens to an incorrect Smart Contract address, they are not lost but can be automatically returned by the Smart Contract. This avoids the inefficiency of the ERC20, where two transactions (***approve / transferFrom***) are required to send tokens to a contract.

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### 3.4. ADVANTAGES OF ERC-777 - SUMMARY

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ERC-777 standard tries to improve upon the widely used ERC-20 token standard. Its main advantages are:

1. Uses the same philosophy as Ether in that tokens are sent with ***send (dest, value, data)***.
2. Both contracts and regular addresses can control and reject which token they send by registering a ***tokensToSendhook*** (rejection is done by reverting in the hook function).
3. Both contracts and regular addresses can control and reject which token they receive by registering a ***tokensReceived*** hook (rejection is done by reverting in the hook function).



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4. The ***tokensReceived*** hook allows to send tokens to a contract and notify it in a single transaction, unlike ERC-20, which requires a double ***call (approve/transferFrom)*** to achieve this.

5. The holder can ***"authorize"*** and ***"revoke"*** operators, which can send tokens on their behalf. These operators are intended to be verified contracts such as an exchange, a cheque processor, or an automatic charging system.

6. Every token transaction contains ***data*** and ***operatorData*** bytes fields to be used freely to pass data from the holder and the operator, respectively.

7. It is backward compatible with wallets that do not contain the ***tokensReceived*** hook function by deploying a proxy contract implementing the ***tokensReceived*** hook for the wallet.

### 3.5. ERC-777 DETAILS

An ERC-777 token standard brings all the advantages of the most popular Smart Contracts. The VAIOT team is fully competent in creating software in this specific area (using Solidity programming language for Smart Contract creation).

The Smart Contract serving the VAIOT Project is built using the OpenZeppelin library, which minimizes various risks by using battle-tested libraries of Smart Contracts for Ethereum. Advanced security mechanisms are built into the Blockchain contracts themselves. Using well-tested codebase and getting feedback from the auditors will enhance security even further.

### 3.6. VAIOT ERC-777 TOKEN CONSTRUCTION

Based on default OpenZeppelin ERC-777 token construction.



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```
pragma solidity ^0.5.0;

import "openzeppelin-solidity/contracts/token/ERC777/ERC777.sol";

contract VAIToken is ERC777 {

    constructor(
        string memory _name,         // name of token
        string memory _symbol,       // symbol of token
        uint256 _totalSupply         // total supply of tokens
    )
    ERC777(_name, _symbol, new address[](0))
    public
    {
        _mint(msg.sender, msg.sender, _totalSupply * 10 ** 18, "", "");
    }
}
```

*Figure 18: VAI Token Contract*

### 3.7. ETHEREUM ERC-777 TOKEN CONTRACT

Default OpenZeppelin ERC-777 token contract interface based on Ethereum EIPs documentation.

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```
pragma solidity ^0.5.0;

interface IERC777 {
    function name() external view returns (string memory);
    function symbol() external view returns (string memory);
    function granularity() external view returns (uint256);
    function totalSupply() external view returns (uint256);
    function balanceOf(address owner) external view returns (uint256);
    function send(address recipient, uint256 amount, bytes calldata data) external;
    function burn(uint256 amount, bytes calldata data) external;
    function isOperatorFor(address operator, address tokenHolder) external view returns (bool);
    function authorizeOperator(address operator) external;
    function revokeOperator(address operator) external;
    function defaultOperators() external view returns (address[] memory);
    function operatorSend(
        address sender,
        address recipient,
        uint256 amount,
        bytes calldata data,
        bytes calldata operatorData
    ) external;
    function operatorBurn(
        address account,
        uint256 amount,
        bytes calldata data,
        bytes calldata operatorData
    ) external;
    event Sent(
        address indexed operator,
        address indexed from,
        address indexed to,
        uint256 amount,
        bytes data,
        bytes operatorData
    );
    event Minted(address indexed operator, address indexed to, uint256 amount, bytes data, bytes operatorData);
    event Burned(address indexed operator, address indexed from, uint256 amount, bytes data, bytes operatorData);
    event AuthorizedOperator(address indexed operator, address indexed tokenHolder);
    event RevokedOperator(address indexed operator, address indexed tokenHolder);
}
```

*Figure 19: ERC777 Interface*

## 4. ETHEREUM TO POLYGON MIGRATION

VAIOT has decided to switch to Polygon Edge and integrate with Polygon mainnet network for the blockchain services and product development.

Polygon is the best choice for VAIOT to deliver innovative products and services, such as Intelligent Contracts, AI Legal Assistant, VAI Payback, and more. Polygon will enable VAIOT to provide users with a seamless, secure, and rewarding experience on the blockchain.

### 4.1. VAIOT's Private Blockchain for contract data processing based on Polygon Edge

One of the first products that will benefit from a switch to Polygon is the AI Legal Assistant and its underlaying technology — Intelligent Contracts. This is a unique service that allows users to create and manage traditional and smart contracts using natural language and AI. The



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contracts are stored on the blockchain as digital equivalents of the agreements, ensuring their validity and security, providing another layer of contractual data undeniability. To protect the privacy and confidentiality of the contractual data, VAIOT will use a private blockchain built with Polygon Edge. This blockchain will store the data generated by VAIOT's contract generation solution. The users will be able to access and review their smart contracts through a dedicated platform that will be available with the first iteration of the AI Legal Assistant. Only authorized parties can access and review the contracts. The platform will also enable decentralized dispute resolution and other features that will enhance the user experience and satisfaction.

### 4.2. VAI Single Asset Staking on Polygon

VAI Single asset Staking allows users to earn passive income by staking VAI tokens in the Pool. User can receive VAI rewards based on their stake amount and duration.

## 5. THE ISSUER'S WALLETS USED

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The VAIOT ERC-777 standard token lies on top of the main Ethereum Blockchain, which allows for using any kind of wallet compatible with the Ethereum network and ERC-777. These solutions are supplied by third parties; they are easy to use and Ledger-supported as browser extensions, as well as mobile and desktop applications, e.g., Metamask.

## 6. SECURITY SAFEGUARDS AGAINST CYBER THREATS

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Cybersecurity is a very important part of the described solution. Following a thorough analysis of different mechanisms, the Issuer has opted to use only the best and the most secure cryptographic primitives – public-key cryptography, AES, EdDSA, ECDSA, and more.

First of all, communication between users of the VAIOT protocol and the network is always encrypted. The main encryption protocol is TLS. VAIOT wallet applications will provide secure, encrypted storage for private keys and will be compatible with hardware wallets for additional security.

VAIOT wallets will use public-key cryptography primitives – ECDSA (curve secp256k1) and EdDSA (curve Ed25519). This will ensure the highest level of security for assets maintained



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through the wallets and resistance to network and Blockchain fraud. Breaking into someone's wallet would require finding the private key and having access to the wallet address (the wallet public key). This can only be done by breaking cryptographic solutions based on elliptic curves, which at the time of writing is very difficult, if not impossible. Transaction fraud could only happen by breaking the ECDSA or EdDSA signatures, which is also extremely difficult at the time of writing.

VAIOT supports on-chain transactions. A transaction is considered valid when it is validated and authenticated by network participants. Details of this transaction are stored on the Blockchain, which makes the transaction irreversible. Off-chain transactions are possible, for example, by an offline exchange of wallets' private keys – this kind of transaction is not public, and it is not recorded on the Blockchain. There is no way to secure or prevent such off-chain transactions.

## V. VAIOT'S ARTIFICIAL INTELLIGENCE

Solutions to the problems and challenges identified by the VAIOT team and mentioned in this Whitepaper call for extensive use of AI. Artificial Intelligence is present in every part of the VAIOT Platform, allowing to reach full interoperability, securing the whole platform with AI-driven security mechanisms, and making VAIOT's digital contracts truly intelligent.

Artificial Intelligence serves to:

- simplify the process of creating Intelligent Contracts (i.a. via the Virtual AI Assistant);
- employ mechanisms to search, analyze and provide the user with the best possible solution and data in each situation;
- propose a contract that is in line with the best practices both on the legal and code level and fulfilling the user's requirements;
- offer a comprehensive user experience with the option to use additional services depending on the type of the contract;
- prevent fraud within the VAIOT network;
- self-diagnose the VAIOT network, including improved security mechanisms.



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The goals set for our Artificial Intelligence, including the highest safety standards and contract quality, will be achieved by using several methods. First of all, VAIOT will utilize machine learning, executed via a hybrid approach using:

- deep neural networks,
- deep learning,
- support vector machines,
- Bayesian networks,
- genetic algorithms,
- heuristics,
- Natural Language Processing – for the Virtual AI Assistant,
- Convolutional Neural Network with reverse PLP (Programming Language Processing), applied in VCGE
- Machine Learning Linear Regression – for the AI transaction fraud detection system.

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Artificial neural networks will help us to model the relationships between inputs and outputs on the VAIOT network. Together with deep learning, they will ensure that various transaction patterns will be analyzed and will allow identifying e.g., fraudulent transactions, money laundering, etc.

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Support Vector Machines (SVM) are used for classification and regression purposes. By giving SVM a set of training examples, each marked as belonging to one of two categories, SVM will have the capability of predicting whether a new example falls into one category or the other. The VAIOT network will use SVM to make Intelligent Contracts more secure. AI algorithms will analyze all the data, and the end-user will be notified if any improprieties are noticed.



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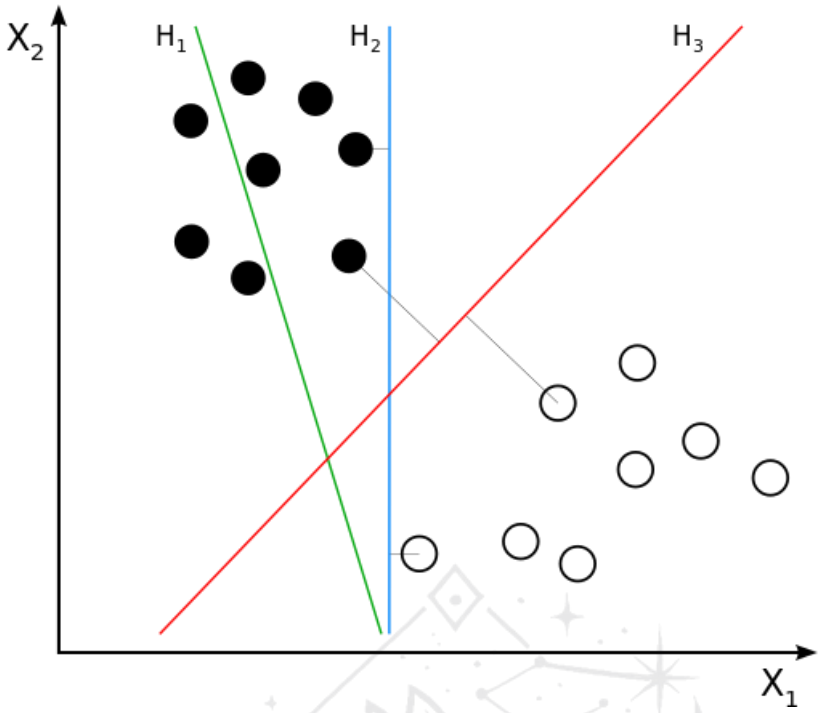



*Figure 21: Hyperplanes chosen by an SVM*

A Bayesian network (directed acyclic graph) is represented in the graphical model as a set of random variables and their conditional independencies. All the nodes are associated with a probability function. Their inputs are node's parent variables' values, while the output is the probability distribution of the node's variable. Our system will utilize Bayesian networks in analyzing data across different databases. It will allow us to use pattern recognition to check the status and ensure the maximum-security level for transactions carried out via Intelligent Contracts.

Genetic algorithms (GA) and heuristics are used for optimization tasks and complicated search problems. Genetic algorithms are inspired by the natural selection process and use operators such as mutation, crossover, and selection. VAIOT will use GA for optimizing the task of creating constellations for the hybrid consensus algorithm and for optimizing the process of Intelligent Contract code creation. A significant amount of data from various databases allows GA to train with a broad population of candidate solutions.



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VAIOT

# 1. NEURAL NETWORKS AS PLP (PROGRAMMING LANGUAGE PROCESSORS) APPLIED IN VCGE AND AI ANALYZER

Convolutional Neural Networks (cNN) as reverse Programming Language Processing (rPLP) will work as the AI analyzer. The AI Analyzer is a part of the project architecture, which supports the Virtual AI Assistant system and VCGE. This knowledge-based system uses a dataset for the default cNN resultant model for the AI Analyzer.

Training and validating datasets in the proportion of 70%/30% respectively will be used. The database will contain objects, classes, and functions categorized as specific business logic features (e.g., Sale, Tokens, Exchange, Transaction, Merit Money, Finance, Insurance, etc.).

In short, the database will contain, among other things, categorized codes of smart contracts (JavaScript and Solidity) under the aforementioned business logic categories. On the other hand, the legal repository will be fed with traditional contracts that follow best practices, delivered by our legal partners (VAIOT's internal legal experts and the community), as well as other legal documents and information, including court jurisprudence, legal cases, and regulations. The key problem solved here is the quantification and tensorization of given code objects and contract words in the dataset for cNN model classification in reverse Programing Language Processing approach. Conceptually, the prepared dataset or each source code object will be converted to a specific multidimensional tensor. The set of tensors objects will be assigned to a specific category (a feature in cNN model), creating a complete base for the AI Analyzer.

The mathematical method for that AI approach is as follows: specific code objects, or words, or sentences are assigned to a multidimensional tensor with specific coordinates. For example, the user said: "I would like to sell a car." Then for this sentence, a proper tensor will be assigned [0,1,2,4,1,0], dimensions representing the word's number, and where the values represent coordinates in tensor space. Then the algorithm will measure the distance or, in other words, tensor metrics in multidimensional space between tensorized words in the dictionary and the sentence tensor. In this way, we get AI detecting the sentence's most valuable logic, based on which the logical class will be extracted. The class is then passed to a trained cNN model in order to extract the proper code template. Positive extraction results will be achieved due to the



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learning process based on an extensive database. The reverse system assumes extracting the data point best fitted to the model (the code object). Mathematically $f(Y^{\mu}) \rightarrow X^{\mu}$, where the function is a vast neural network model, where dependent as well as independent variables are multidimensional. Data points best fitted to a model from a particular recognized class are obtained. The inner tensor product will be calculated as follows: $s = g_{\mu\nu}x^{\mu}y^{\nu}$. Where $g_{\mu\nu}$ is a metric tensor, and its value is of great importance for AI processes.

VCGE, working together with VAIOT AI, will detect key features used by the user, apply tensorization, and assign them to their proper source code objects stored in the cNN model. VCGE will exchange calculated class from tensor metrics with a machine learning model to extract a standardized code with proper logic and empty variables. The variables then will be filled by another AI processor, converting images to variables by OCR, or by the voice-to-text approach. When the generated code is filled with the user-created variables, the contract generation process will be complete.

This data-driven approach will retrain the cNN model when the user accepts each Intelligent Contract solution. The learning database will then record new learning data. The whole model will be retained periodically by the VAIOT AI computational resources, which guarantee fast data processing in this machine learning solution. Hence, machine learning algorithms, in particular convolutional Neural Networks, are used in supervised scope classification, while tensorization is used for NLP and PLP processing.

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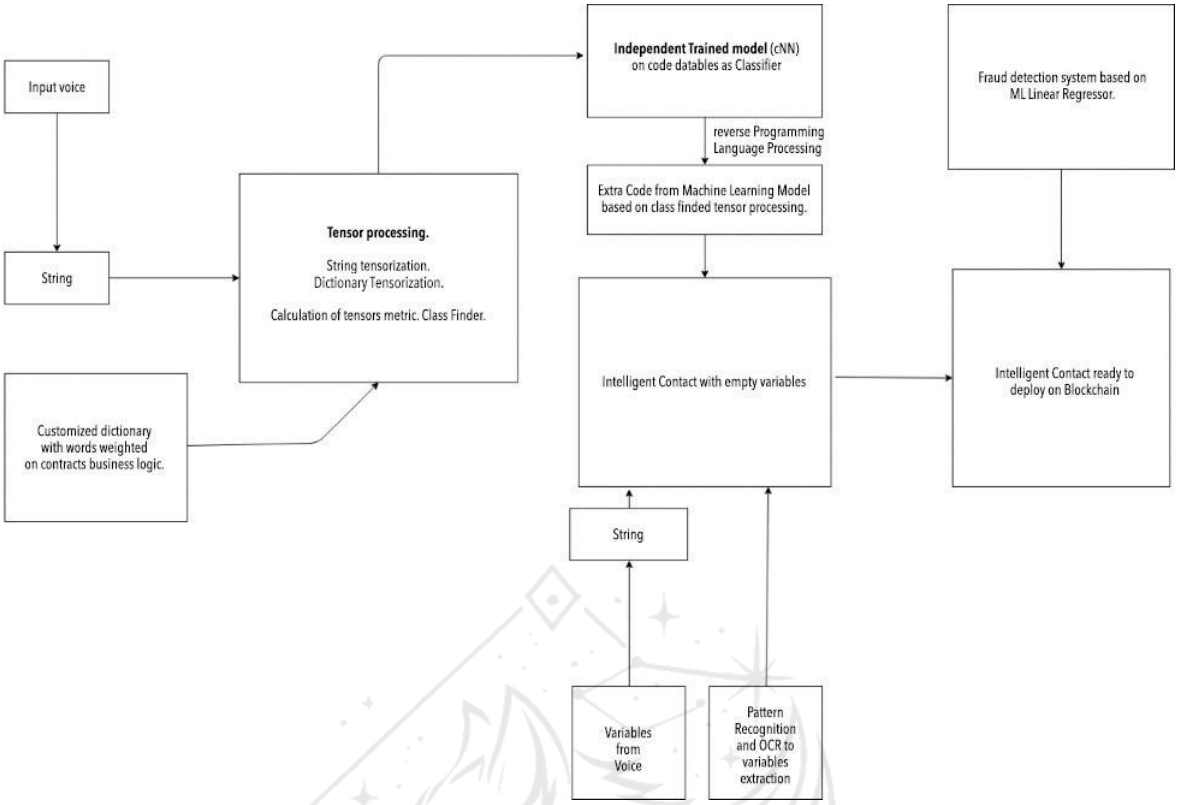



*Figure 22: Intelligent Contract's code creation process*

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## 2. MACHINE LEARNING LINEAR REGRESSION USED FOR THE AI FRAUD TRANSACTION DETECTION SYSTEM

Intelligent Contracts provide an additional level of security that surpasses all existing solutions. This additional security system is independently trained from previous contract generation mechanisms. Security of Intelligent Contracts relies on a fraud detection machine learning linear regression model. A regression model uses part of the aforementioned database with properly designed Intelligent Contract objects, coded with the best programming practices and best-known proper transaction design, for example, without nested loops and big transaction arrays. This database will be specially prepared by the human hand to ensure that the created model baseline is highly relevant. The tensorization method will also be used with this machine learning approach.

All parsed code outliers of this trained model with specific tolerance will be detected and properly signaled to the user by the Virtual AI Assistant and GUI. The model learns from generated Intelligent Contract code with support from the AI Analyzer. This unsupervised



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regressive model needs much less computational resources than Neural Network approaches, which is beneficial for the performance of the whole VAIOT Platform. The linear regression model for tensorized dataset is, $Y_i = \beta_0 + \beta_1 X_i + \epsilon_i$, where $Y_i$ – dependent variable, $\beta_0$ - bias tensor, $\beta_1$ – weights tensor, $X_i$ – features, $\epsilon_i$- random error term.

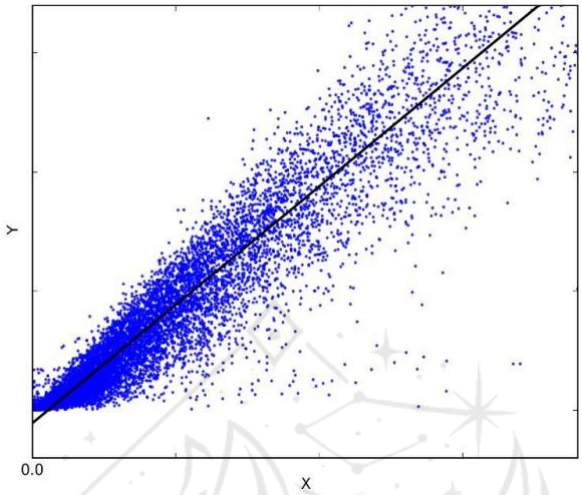



*Figure 23: Linear Regression*

## 3. NATURAL LANGUAGE PROCESSING USED FOR THE VIRTUAL AI ASSISTANT

The user will communicate with the VAIOT Platform via the Virtual AI Assistant, which uses Natural Language Processing (NLP) methods to understand the keywords for the Intelligent Contract preparation process.

The Virtual AI Assistant analyzes the user's voice data in real-time, and if any help is required, it will provide the user with suitable support options. When the connected systems detect fraud or a scam in the transaction logic, the user will be informed and able to decide whether it is appropriate to take the indicated risk or cancel the operation. Additional fraud prevention solutions will be provided for other types of fraud. The technological aspects of NLP processing strongly depend on the word dictionary used for the NLP learning model. The entire word lemmatization process, vectorization, and algorithms processing (like TF-IDF) strongly depends on the dictionary. We want to use a dictionary that will include business language directly related to the language employed by the user. In other words, the dictionary used for NLP will contain words and phrases that are specific to a given sector. This will guarantee the


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best possible understanding of the user's input by the Virtual AI Assistant.

VAIOT aims at an extensive use of Intelligent Contracts. To encourage users to use a given technology, it must be intuitive and offer simplification over previously used methods of contract execution. To be truly intelligent, VAIOT's contracts also employ legal analysis with deep neural network AI based on legal repositories and add an extra authentication layer with the use of trusted profiles, the KYC procedure, and qualified electronic signatures. Full contract content in understandable form can be printed out and signed traditionally. Intelligent Contracts can achieve this by using a natural user interface instead of programming language, which includes speech and image recognition for easy input of the contract data, and the Virtual AI Assistant, which helps the user at every step of contract creation, thus ensuring its correctness and safety.

Authentication mechanisms of VAIOT, briefly mentioned above, use a new biometric approach. Our verified users will have the ability to be authenticated during the Intelligent Contract creation process using just their voice. AI mechanism used to perform the authentication extracts voice features of user-chosen phrases and creates a unique voice signature. To confirm identity, the user must speak an authentication phrase, and applied AI mechanisms will decide if the authentication was successful or not.

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## 4. AI IN THE INTELLIGENT CONTRACT CREATION PROCESS

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**AI analysis** is another essential part of the Intelligent Contract creation process. All acquired data is analyzed to provide:

- correct categorization of the contract and proper legal options and mechanisms to be used (based on the legal data available and the contract repository);
- the best possible level of security, legal quality, and certainty in accordance with contract rules and regulations as well as the parties' interests as written in the contract;
- accurate code generation for Intelligent Contract design, issuance, and execution;
- analysis of formal requirements, assumptions, rules, and the parties' intent;



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- user authentication;
- choosing the right contract template;
- fraud detection.

Code generation is executed by a deep neural network, which in the first phase is trained with contracts developed on other Blockchains and those developed by the VAIOT team. The AI analyzes the code for malicious patterns and instructions, thus preventing the creation of contracts with known vulnerabilities. Each newly created and successfully finished contract acts as a new element of the training set. The training set is also extended with code samples from contracts created within connected Blockchains, thus ensuring a constant inflow of code created not just by machines. The AI mechanism used by VAIOT is also trained with edge cases to ensure it can differentiate between good and bad practices. The learning curve for this mechanism is an S-Curve, where it is expected to have more than 90% performance after having a training set with at least 20 000 code examples.




*Figure 24: Learning curve*

Analysis of formal requirements is one of the VAIOT AI's top skills. It has the potential to replace traditional legal services in terms of the creation of fair contracts. Utilized machine learning mechanism analyzes data from four primary sources:

- Contract templates and anonymized examples obtained from leading international law firms;
- Historical contracts with the interpretation of their statements;


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- VAIOT image recognition contract creation process;
- Legal databases containing legal cases, documents, national and international regulations, court judgments and jurisprudence examples, etc., all in the proper format.

As in the case of code generation, the AI mechanism is trained with edge cases, meaning problems occurring only at the extreme operating parameters, in this case including abusive clauses and best practices. The training set is being expanded by continuous cooperation with leading international law firms and by making analyses of contracts created by VAIOT users. The learning curve for formal requirements analysis is an exponential curve, where we expect to have more than 60% performance after having a training set with at least 100 000 contract examples. Our system proficiency can improve the quality of the contracts without any upper limit. It is associated with the need to adapt contracts created with VAIOT to changes taking place in the world and in the international and local law.

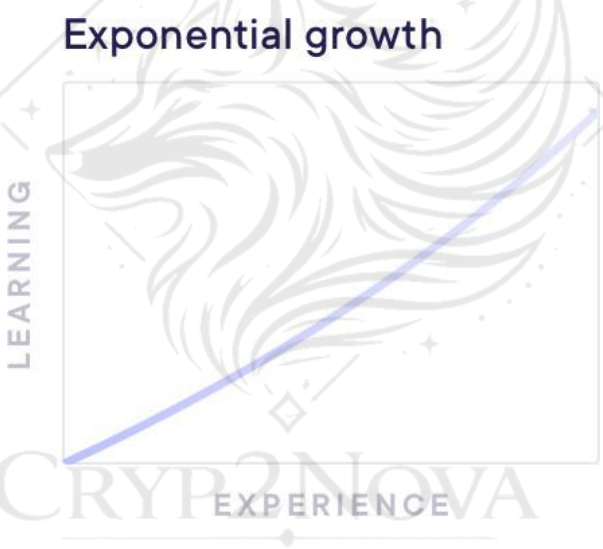



*Figure 25: Learning curve for formal analysis*

The deep neural network realizes the process of choosing the right traditional contract template. The AI learns about templates used by project contributors – international law firms, from past successful contracts, government regulations, legal cases and databases, court judgments, etc. Our mechanism will have >99% probability of generating a perfect template after training on a set of just 50 000 different templates. The traditional template can be printed out or stored in a securely encrypted cloud storage.


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AI Analysis also checks contracts for any fraud or scam patterns. The AI makes its decisions based on, among other things, contract data, parties involved in the contract and their input, wallets used, and contract statements. Machine learning behind this mechanism runs based on historical data, known fraudulent behaviors, and online information about scams.

Like formal requirements analysis, we expect an exponential learning curve for our mechanism. The estimated probability of fraud/scam detection is about 60% for a training set of 100 000 examples. Due to continuous learning, we expect to achieve detection probability of nearly 100% after utilizing a training set of 1 000 000 examples, which is a part of VAIOT's long-term strategy.

## 5. VAIOT AND IBM WATSON

VAIOT utilizes many AI technologies and employs the IBM Watson AI environment, mechanisms, and resources. Creation of an Intelligent Contract requires well-tested tools, which will be used for:

- Complex computations for Convolutional Neural Network training, validation, and fraud detection machine learning system;
- Natural Language Processing, including conversion from speech to text, conversion from text to speech, understanding of natural language, understanding of formal language, classifying natural language, and language translation;
- Guaranteeing the security of transactions by cryptographic calculations;
- Pattern recognition;
- Image recognition;
- Optical character recognition.

IBM Watson Services help us to ensure the highest level of user experience. VAIOT utilizes many of Watson's capabilities, among others: Natural Language Understanding, Speech to Text, Text to Speech, Natural Language Classifier, and Language Translator.

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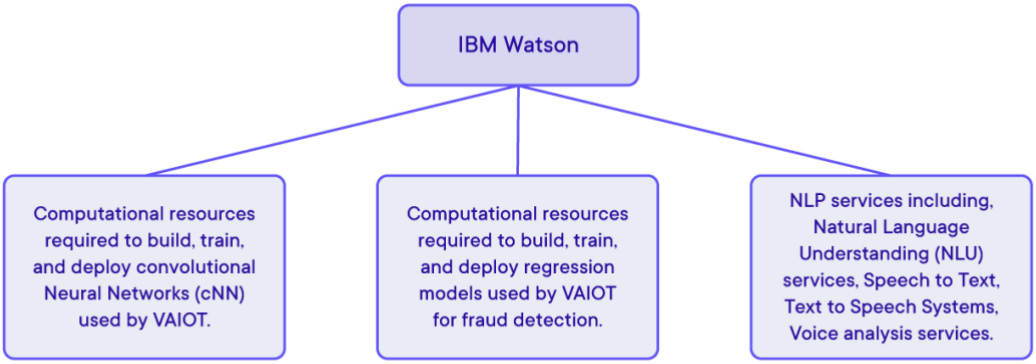



*Figure 26: VAIOT's AI and IBM Watson Services*

Natural Language Understanding (NLU) is used for analyzing semantic features of text input in VAIOT's Intelligent Contracts. It helps to gather information from the text, such as categories, concepts, emotions, keywords, metadata, relations, semantic roles, and sentiment. We also use NLU for understanding the formal parts of the contract, especially those related to legal aspects of business transactions. This data is used by the VAIOT's AI mechanisms to ensure that the proper and quality Intelligent Contract is prepared (contract classification and content generation) and that all data is properly understood – both by the contract creation mechanism and by the end-users.

The VAIOT AI mechanisms use speech to Text service for the process of gathering data from the user's speech. The text is then processed by the AI to provide as much data for the creation of the Intelligent Contract as possible.

Text to Speech service is used in interactions with the end-user of VAIOT applications. It is the endpoint for interaction with the parties to the contract. All texts are prepared by the VAIOT AI technology based on initial learning processes.

Natural Language Classifier (NLC) helps the VAIOT AI in understanding short texts and classifying them in the process of creating an Intelligent Contract. VAIOT also implements its mechanism that helps to prevent fraud and makes the training process of NLC more efficient.

VAIOT plans to develop, as another future functionality, a Tone Analyzer service used for fraud detection. It is intended to ensure that parties creating the Intelligent Contract are fully aware of the process and that they do not work under duress. Tone analysis should also help VAIOT



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to monitor the user's satisfaction with the Intelligent Contract creation process.

VAIOT uses the language Translator for automatic detection of the language used by the user and for delivering translation into different languages. This functionality is essential for international contracts, where both parties need to have the contract in their official languages.

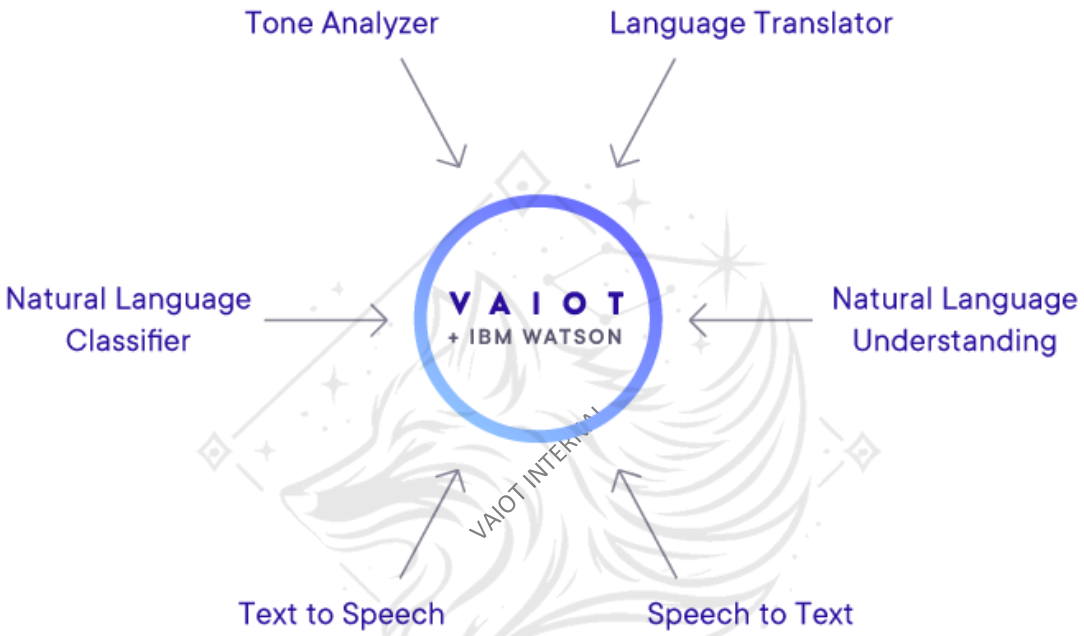



*Figure 27: VAIOT's AI and IBM Watson Services*

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# VI. VAI TOKEN ECONOMY

## 1. VAI TOKENHOLDERS RIGHTS

VAI Tokens constitute Virtual Financial Assets in terms of the applicable legal framework established in Malta.

The VAI Token does not entitle the purchaser to any equity, governance, voting, or other forms of control over the management of the company whatsoever or similar right or entitlement in the company or any of its affiliated companies and does not represent or constitute any ownership right or stake, share or security or equivalent rights or any rights to participate in or receive profits or income, arising from the acquisition, management or disposal of the pooled property or sums paid out on such profits or income or any other form of participation in or relating to VAIOT LIMITED.

Subject to the terms and restrictions laid down in this Whitepaper, after migrating VAIOT's proprietary Blockchain solution based on Polygon, Tokenholders will be able to use their VAI Tokens in exchange for services on the VAIOT Platform. The Issuer also intends to apply for admission to trading on one or more DLT Exchanges. After listing on one or more DLT Exchanges, the VAI Tokens shall be exchangeable on such exchange platforms.

## 2. INTRODUCTION TO THE TOKEN ECONOMY

As explained in detail in this Whitepaper, VAIOT is creating the VAI Token thanks to the underlying Blockchain technology. VAIOT designed a token economy, both for the ERC-777 token and the proprietary Blockchain solution that VAIOT is designing and will release at a later stage as described in this Whitepaper, to ensure that the VAI Token will be an effective means of settlement, holding specific economic value.

In its final state, VAIOT will use a standalone, proprietary Blockchain solution that requires its digital asset to serve the functionalities of the VAIOT Platform and ensure its autonomy. Independence from other networks increases security levels as well as the network's efficiency as it only deals with the tasks that are inherent to the VAIOT Platform. In contrast, other universal Blockchain platforms handle a number of different requests, thus reducing their efficiency. The value of VAI Tokens will be a result of the value of the network and its



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reputation. Technical know-how is not required for end-users to benefit from the solutions offered. VAI Tokens are the lifeblood of the network and thus play a vital role in the functioning of the VAIOT Platform

The VAI Token is a DLT Asset, which shall be used as a means of settlement when VAIOT's clients make use of VAIOT's solutions. The VAI Token will be used to execute Intelligent Contracts and will be circulating among VAIOT's solutions described in Section III - INTRODUCTION TO THE BUSINESS MODEL, e.g., the Virtual AI Sale Assistant. To ensure network safety, nodes will be rewarded with VAI Tokens.

**Important Note:** As the VAI Token will be initially based on the ERC-777 standard and eventually migrated to a proprietary Blockchain based on Polygon, its Token Economy will differ in both phases. Please refer to the contents of the headlines below (ERC-777, VAI post-migration, or ERC-777 & VAI post-migration) to see in which phase of the development said part of the token economy would be applicable.

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**Overview of token applications in the VAIOT Ecosystem**

1. Settlement method for goods and services offered via the VAIOT Platform– VAI post-migration
2. **Payback Bonus:** Tokens granted as a payback bonus after a product or a service is bought by the user via the VAIOT Platform. Such VAI Tokens can be used for further purchases thus reducing prices of products and services offered on the VAIOT Platform – ERC-777 & VAI post-migration
3. **Staking & pre-staking rewards:** Rewards for nodes securing the network in the PoS consensus and incentives for participation in the network operations prior the migration – ERC-777 & VAI post-migration;

Please find a detailed description of the applications of the VAI Token below.



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## 2.1. SETTLEMENT METHOD FOR GOODS AND SERVICES OFFERED VIA THE VAIOT PLATFORM

**Fiat payment**

ERC-777 & VAI post-migration

There will be adapters allowing payments in supported Fiat currencies, be it EUR or USD. A small part of the payment will be converted into VAI Tokens (bought on the free market) and distributed as an additional reward for the network nodes. This approach allows a fair incentive system for PoS consensus participants, rewarding them even if the payment is not finalized with VAI Tokens. The validators guarantee not only the circulation of the VAI Token but also the overall security of the VAIOT Platform, e.g. secure creation and storage of Intelligent Contracts. This implies that the rewards system is still in place even if the payment is made in Fiat currencies, making it possible to correlate the business performance of the VAIOT Platform with the VAI Token economy.

**VAI Token settlement**

VAI post-migration

Depending on the service offered on the platform, there might be direct VAI Token settlement support via Intelligent Contracts; no conversion is required, and only a transaction fee is paid. If payment is made in VAI Tokens instead of a Fiat currency, the fee will be reduced, with the aim of encouraging users to buy, keep and use VAI Tokens as a means of settlement (only available after the migration to the proprietary Blockchain solution).

When a settlement for a service offered by VAIOT is done using VAI Tokens, these VAI Tokens should be transferred to the Issuer's wallet. The Issuer will be able to sell the VAI Tokens received as settlement for services on DLT Exchanges, keep them at his discretion, or use them for other platform functionalities.

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**VAIOT Value Assurance System**

VAI post-migration

Digital assets may be subject to significant price fluctuations. Since the token value may not be as stable as in the case of Fiat currencies, it can be difficult to determine its purchasing power. A given service may be priced at 50 VAI Tokens one day and 70 VAI Tokens another. To mitigate this risk for token users, the *VAIOT Value Assurance System (VVAS)* was introduced as part of the Intelligent Contracts concept.

At the time of the transaction, a specific exchange rate is offered to show the VAI Token conversion rate to a given Fiat currency, e.g., EUR. The user accepts the exchange rate, which is guaranteed by the validator committee (a group of nodes) and secured with the funds from the growth pool (see the definition below).

The value of the conversion rate depends on the current price of the VAI Token, market situation, and the duration of the contract settlement. The proposition is calculated by VAIOT algorithms used by validators (nodes) with the support of AI. When the exchange rate is calculated correctly, the transaction proceeds as agreed, and nodes benefit from the brokerage.

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**Growth pool**

ERC-777 & VAI post-migration

The growth pool is a wallet address where all the network earnings exceeding the standard transaction fees are stored, i.e., when paid in Fiat currencies instead of VAI Tokens, the transaction fee is higher. This surplus then goes to the growth pool.

Tokens allocated to the growth pool can be used, for example, for the value assurance system to secure the agreed exchange rate. The growth pool wallet itself is also used for the secure storage of deposits (see the description of the network reputation bonding system below).

VAI Tokens from the growth pool can also act as an additional incentive in case of low staking profitability (decreasing staking rewards).



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**Network reputation bonding system**

ERC-777 & VAI post-migration

Part of the VAIOT network is the reputation bonding system. To use the system, a VAI Tokenholder needs to own a specified number of VAI Tokens and activate the reputation bonding system option. Once activated, the Tokenholder can lock up a portion of his VAI Tokens. As long as the assets stay locked, there is no additional charge for using the particular VAIOT Platform service, as specified in the description of the levels of the network reputation bonding system. The option is not activated automatically, and it is applicable only to the users who decided to activate it, and who will then be able to take advantage of discounted prices for services offered on the VAIOT Platform. This makes it an excellent system for individuals with significant amounts of VAI Tokens, as the more tokens are locked up in contracts, the fewer tokens circulate on the free market.

Network bonding system summary:

When tokens are put into the deposit (locked up), one can access specified Platform functionalities without additional payments. Once the user decides not to use the reputation bonding system anymore and wishes to release his VAI Tokens, a specific percentage (based on the officially announced deduction table) of the VAI Tokens locked up will be deducted and moved to the Growth Pool. This is designed to prevent situations where the user withdraws and deposits the VAI Tokens freely, utilizing VAIOT's Platform services at no additional fees without locking VAI Tokens for a reasonable period.

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The number of functionalities and services available at the respective levels of tokens deposited (level 1 level 2, level 3) will expand over time. Please see the basic assumptions below. The number of tokens required to be locked will vary depending on the market situation.

**Level 1** – no VAI Token deposit (lock-up) is required to access the functionalities listed below.

- Access the VAIOT public applications,
- Generation of Intelligent Contracts,

**Level 2**

- Digitally signing contracts/agreements,



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- Sharing generated contracts between users,
- Analyzing external contracts (contracts uploaded to the VAIOT solution),
- Access to the Contract Manager (archive) for external contracts/ documents.

**Level 3**

- Allows releasing applications on the VAIOT network. The reason for the Level 3 classification for this functionality is to limit the number of services that may be of poor quality.

## 2.2. PAYBACK BONUS ALLOWING LOWER PRICES

**Payback bonus granted while using VAIOT solutions**

ERC-777 & VAI post-migration

For the implementation of VAIOT or its components in commercial solutions such as intelligent service distribution channel, the VAI Token will be used as an incentive mechanism for customers. After each finalized purchase a part of the transaction value (paid using a Fiat currency; if paid in VAI Tokens, a discount is granted and the price reduced) is returned to the user's Payback Bonus Wallet as a payback bonus in VAI Tokens. It can be used to buy services at a discounted price.

**Payback Bonus Wallet**

This wallet will serve the sole purpose of holding VAI Tokens, which are granted to VAIOT Platform users as a 'payback bonus' when they buy services provided via the VAIOT Platform, as described in detail in this Whitepaper. The Payback Bonus Wallet is a default wallet created for every VAIOT user, which means it is automatically created once an account is set up on the VAIOT Platform. It is used in the process of payback bonus distribution after the product or service was bought via the Virtual AI Sales Assistant.

The Payback Bonus Wallet will be available in the initial version of the VAIOT Platform, supporting the ERC-777 VAI Token, as well as post-migration. Once the user obtains the payback bonus in VAI Tokens, the respective number of tokens is delivered to his Payback Bonus Wallet. VAI Tokens in this wallet are under the full, exclusive control of the user. The Company has no control over such VAI Tokens until the user decides to use them within the



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VAIOT Platform. The VAI Tokens obtained as a payback bonus can be used to buy products and services at a discounted price. The VAI Tokens gathered in the Payback Bonus Wallet will have to be utilized within three years from the date of the VAI Tokens being delivered to such wallet; otherwise, they will be automatically transferred to the Issuer's Growth Pool.
The user only holds his public key, while all the actions he executes via the Payback Bonus Wallet are confirmed using VAIOT's private keys.

**VAIOT Wallet**

After the migration to the VAIOT's proprietary Blockchain solution, the VAIOT Wallet can be enabled at the user's request on the VAIOT Platform. It is used to freely manage all VAI Tokens contained therein (in contrast to the Payback Bonus Wallet, which only holds those VAI Tokens granted to users by way of the reward). VAI Tokens in the VAIOT Wallet are under the full, exclusive control of the user. The Company has no control over such VAI Tokens.
The transfer of assets from the Payback Bonus Wallet to the VAIOT Wallet is associated with an additional fixed fee paid in VAI Tokens; the fee is distributed to the network nodes and the VAIOT Growth Pool. The rationale behind the fee is based on the fact that the VAI Tokens held in the Payback Bonus Wallet are intended to reduce the actual prices of products and services offered on the VAIOT Platform and not for the VAI Tokens in such wallet to be sold externally. This allows to keep VAI Tokens circulating within the VAIOT Platform and becomes an additional incentive for the users to come back to the VAIOT Platform for the purpose of buying products and services in the future.

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**Payback bonus explained**

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Whenever a customer purchases a service through an intelligent service distribution channel (e.g., insurance), he becomes eligible for the payback program. In this payback program, the user will receive a bonus on each sale. The bonus will be expressed as a fixed-rate (percentage of the value of a given sale). The payback will be done by the Issuer buying back a certain number of VAI Tokens from the secondary market (via a DLT Exchange).

The following example illustrates the payback mechanism in practice:

Value of insurance bought by customer A (price paid): 100 EUR (paid in EUR or VAI Tokens)



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Bonus: 10% x 100 EUR = 10 EUR

Current exchange rate: 0.2 EUR for 1 VAI Token

Number of tokens bought back from the market: 50 VAI Tokens

Immediately upon buying back these tokens from the market, the Issuer transfers them to the Payback Bonus Wallet of that specific customer who is eligible for that specific payback based on the purchase of a given service via one of VAIOT solutions.

The customer who receives 50 VAI Tokens in his wallet as payback, may:

1. Cash in on that bonus by spending those 50 VAI Tokens assigned to him as payback on products/services offered via the VAIOT Platform (all business lines) hence reducing their price. The list includes fees for drafting a legal contract or a fee for any other service (e.g. the user wishes to renew his car insurance via the VAIOT Platform) that will be offered through VAIOT business lines and whose providers will be accepting VAI Tokens as a settlement mechanism; or

2. Exchange those 50 VAI Tokens at the current exchange rate into Fiat or cryptocurrency; or

3. Hold on to those VAI Tokens for investment purposes to benefit from future market price increases of VAI Tokens.

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In scenario 1, the beneficiary of the payback program decides to cash in on the assigned bonus within the VAIOT Platform, therefore effectively receiving a discount (corrected for any market fluctuations over a relatively short period) on the price paid for services purchased via the VAIOT Platform (all business lines). In scenario 2, the beneficiary of the payback program decides to exchange VAI Tokens received as payback for Fiat money on the DLT Exchange. In that case, a transfer between the beneficiary's Payback Bonsu Wallet and regular VAIOT Wallet is associated with an additional fixed fee paid in VAI Tokens. In scenario 3, the beneficiary of the payback program decides to accumulate the bonus expecting its growth in value over time due to the rising price of VAI Token on the secondary market. In this case, the beneficiary may decide, at any point in the future, to either sell his VAI Tokens on the DLT Exchange (the same mechanism as in scenario two applies) or to use them to purchase other products or services. The beneficiary of the payback program have to remember that the VAI



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Tokens gathered on the Payback Bonus Wallet (and not transferred to the regular VAIOT Wallet) will have to be utilized within three years since the date of the VAI Tokens being delivered to the Payback Bonus Wallet; otherwise, they will be automatically transferred to the Issuer's Growth Pool.

Each act of sale done via the VAIOT Platform (all business lines) will trigger an immediate action of assigning the customer a payback bonus, which will be done by purchasing the respective number of tokens required to fulfill the obligation towards the purchaser of service.

Once the VAIOT Platform (all business lines) takes flight and reaches the expected average daily number of new customers, this should translate into a steady stream of demand for VAI Tokens generated by VAIOT buying back VAI Tokens from the secondary market to assign them to the Issuer's customers as their payback bonuses. VAI Tokens will be repurchased at any current market price, as the priority will not be the price paid, but the number of tokens needed to collect for payback bonuses to all users. The demand will be quantity-driven and not price-driven, which should act towards stabilizing the demand side of the market and creating the right environment for the growth of the market price of VAI Token.

This mechanism of utilizing VAI Tokens for the payback program carries significant implications for the size of IVFAO. To secure the possibility of buying back the VAI Tokens needed for payback bonus pay-outs, there should be a large enough free float of VAI Tokens on the secondary market.

At the same time, it is anticipated that a substantial amount of VAI Tokens will be held in wallets (of both market investors and payback program beneficiaries), as people will accumulate them, in the expectation of rising prices.

### 2.3. REWARDS FOR NODES SECURING THE NETWORK

VAI pre-migration (ERC-777)

Prior to the migration to the proprietary blockchain solution, 3% of all tokens will be allocated to the pre-staking, where VAIOT can incentivize users to participate in the network operations prior to the migration.



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VAI post-migration

As a basic functionality, one can set up a network node by depositing funds and validating the transactions and get rewarded with VAI Tokens in return. The rewards for the nodes are distributed from the token allocation for the staking rewards (22% of the total token supply), as well as the additional fees from other sources such as transaction fees (contracts generation), transfer of tokens from Payback Bonus Wallet to VAIOT Wallet, conversion from Fiat to VAI Tokens and fees paid in the VAIOT Value Assurance System (VVAS).

**The bonus granted for providing data**

The user can get a bonus in VAI Tokens for the support in developing AI, such as providing additional data for the AI learning process. Such a reward should be distributed to the user's Payback Bonus Wallet.

## 3. GENESIS BLOCK

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The maximum number of VAI Tokens has been determined as 400,000,000 (four hundred million). In the genesis block, 400,000,000 (four hundred million) VAI Tokens will be released with 22% of the Staking Rewards token allocation being locked till the migration to the proprietary blockchain solution. Meaning, exactly 88,000,000 VAI Tokens (eighty eight million), is intended to be released as rewards during the process of securing the network (PoS). Remaining 3% of the Staking Rewards token allocation (12,000,000 VAI Tokens) will be used as an incentive for participation in the network operations prior to the migration (ERC-777). VAIOT will initially raise funding through a token issued on the Ethereum network. However, VAIOT aims to migrate to a Polygon - based proprietary Blockchain solution.

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For this reason, the majority of the rewards distribution for nodes will start after the migration to the native VAIOT Blockchain is complete.

## 4. TOKEN ALLOCATION

Total number of tokens: 400,000,000 (four hundred million)

IVFAO Participants (public sale): 2%



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Private placements (private sale): 30%

Advisors: 6%

Partners: 12%

Staking rewards: 25%

Team: 15%

Ecosystem: 10%

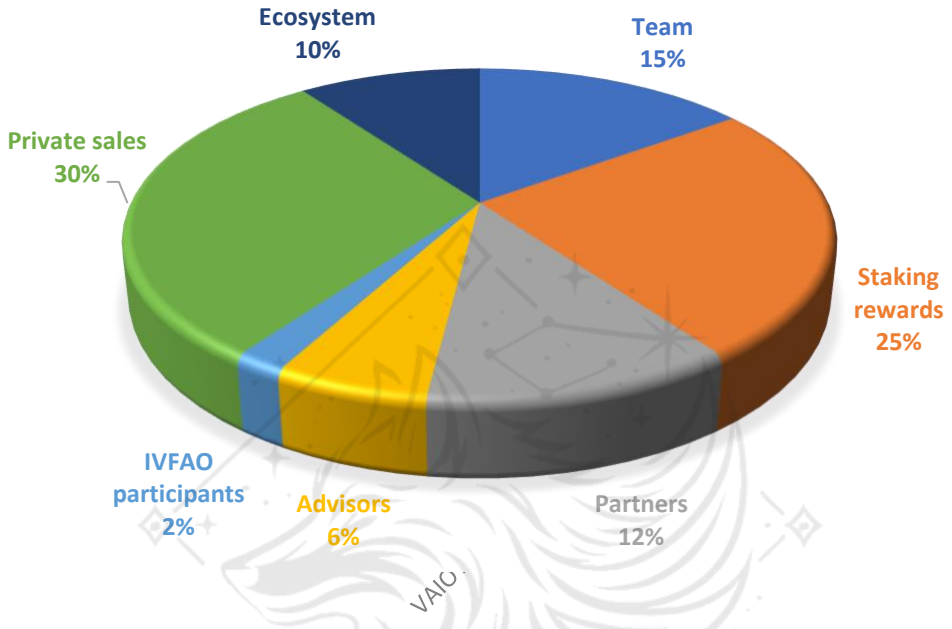



*Figure 28: Distribution of VAI Token*

**2% - IVFAO Participants (public sale)**

2% of all tokens was exclusively available for distribution to Participants in the Initial VFA Offering. The VAIOT team allocated 2% of the Total Supply for a public sale to increase both the funding for the project and the level of decentralization. The Issuer wants to build a community of Tokenholders supporting the project and holding VAI Tokens long-term.

**30% - Private Sale**

VAIOT has already allocated a significant amount of VAI Tokens to Private Sale investors who decided to support the Project long-term. Their VAI Tokens are subject to certain Terms and Conditions and the Issuer's intention is for such tokens to be locked for a certain amount of time.



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**15% - Team**

Individual team members will be compensated or partly compensated for services rendered by means of VAI Tokens. The VAIOT team will hold this percentage. The intention of such token allotment is to lockup those tokens in the early stages of the project, which will prevent a decrease in the token value. The VAI Tokens allocated to team members are subject to certain Terms and Conditions and the Issuer's intention is for such tokens to be locked up for a certain amount of time.

**25% - Staking rewards**

Not all the tokens will be in circulation from the beginning of network operations. 22% of them will be distributed to the network as rewards that can be obtained while governing the network in the Proof of Stake consensus. Therefore, these tokens will not be in circulation from the first block (phase 1). Remaining 3% of all tokens will be allocated to the pre-staking, where VAIOT can incentivize users to participate in the network operations prior to the migration to the proprietary blockchain solution.

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**12% - Partners**

Certain partners, both individuals, and organizations supporting the Project shall be linked to the project and/or compensated or partly compensated for their cooperation or services rendered by means of VAI Tokens. This includes partners investing in the Issuer by means of equity and being granted VAI Tokens to participate in the underlying blockchain ecosystem. 12% of all VAI Tokens are designated to be distributed to the partners of VAIOT. This is an incentive offered to the entities who contributed and believed in the VAIOT Project from its early stages, investing time and money to actively support it. The VAI Tokens allocated to partners are subject to certain Terms and Conditions and the Issuer's intention is for such tokens to be locked up for a certain amount of time.



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**6% -Advisors**

Individual advisors shall be compensated or partly compensated for services rendered using VAI Tokens. 7% of VAI Tokens are intended to be distributed to specialists in various areas, who cooperate with the VAIOT team. The VAI Tokens allocated to advisors are subject to certain Terms and Conditions and the Issuer's intention is for such tokens to be locked up for a certain amount of time.

**10% - Ecosystem**

VAIOT dedicated 10% of total supply to support the community behind the project and all activities aiming at strengthening the Project, VAIOT's brand, the VAIOT community, and its public relations and marketing strategy in general. Such activities may include, but shall not be limited to: airdrop & bounty programs, marketing activities, network incentives, community building, rewards for social media actions, referrals and testimonials. This allocation is subject to proper vesting schedules and will be locked-up to ensure IVFAO Participants' (public sale acquirers) investment safety. These VAI Tokens may also be used to provide desired market liquidity to the VAI Tokens or support any VAIOT's Platform functionalities e.g. Payback Bonus Program.

Any VAI Tokens which are not subscribed for in the IVFAO or in any way not taken up will belong to the Issuer and may be used, utilized, and/or distributed as VAIOT deems fit at its sole discretion.

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# VII. THE INITIAL VFA OFFERING

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## 1. PREVIOUS ROUNDS OF FUNDING

In 2019 the Issuer has raised 1.5 M EUR in a seed round and allocated a significant amount of VAI Tokens to such investor/s. The funds raised were utilized for marketing purposes (i.a. liaising with and contracting PR and digital marketing agencies, producing application animations and video explainer about VAIOT Project, developing Website and graphical design), technology development (including a recent software development contract with IBM for a joint project developing AI Assistant based on IBM Watson as well as internal development of both MVP for AI Assistant and VAIOT's blockchain solution), team



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enhancement, and VFA application process (including cooperation with Grant Thornton, Systems Audit, etc.).

The Issuer has subsequently decided to register this Whitepaper with the Malta Financial Services Authority (MFSA) and undertake an Initial VFA Offering in accordance with the Maltese law to raise further financing to be utilized in as described in this Whitepaper.

In 2020 the Issuer received undertakings from private investors for an amount of 3,5 M EUR in a private pre-sale of VAI Tokens, thereby allocating 8,75% of the Total Supply of VAIOT's VAI Tokens to such private investors.

## 2. KEY CHARACTERISTICS OF THE OFFERING

### 2.1. REASONS FOR THE INITIAL VFA OFFERING

VAIOT is launching the IVFAO with the aim of raising finance in order to:

- continue developing the VAIOT Platform and its underlying technology; funds will be used for R&D, software and product development, human resources, acquisition of the necessary hardware and software, market research, product maintenance, and related expenses and costs related to the development of the VAIOT Platform and underlying technology;
- cover expenses related to marketing and sales of VAIOT's products, as well as expenses related to public relations;
- cover other operational expenses and costs the business may face from time to time.

Additional reasons behind the Initial VFA Offering are as follows:

- to ensure that the VAI Token circulating within the offered DLT-based solution is exchangeable and accessible to a wide audience on DLT Exchanges to ensure availability of VAIOT's services to users;
- to ensure full transparency and compliance with Maltese regulations to protect investors' interests and well-being;
- the planned launch of the IVFAO on a DLT Exchange or any other form of public sale



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and DLT Exchange listing to facilitate secondary market trading of the VAI Token.

## 2.2. INITIAL VFA OFFERING STRUCTURE

1. Private Sale
2. Public Sale through the IVFAO

The Issuer is planning to offer VAI Tokens to the public in the form of an IVFAO.

After the listing of the VAI Token, investors who acquired VAI Tokens will have the opportunity to exchange them in the secondary market on one or more DLT Exchanges.

## 2.3. PLANNED NUMBER OF VAI TOKENS IN CIRCULATION AFTER IVFAO

It is planned to have 2% of the total of VAI Tokens in circulation after the Initial VFA Offering (the VAI Tokens held only by IVFAO Participants shall be freely transferable immediately upon admission to trading on one or more DLT Exchanges). The remaining VAI Tokens will be released gradually over time in accordance with the terms and conditions connected with the VAI Tokens in question.

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Total number of VAI Tokens to be issued (maximum circulating supply)

Phase 1 (ERC-777) – maximum circulating supply: 312,000,000 (three hundred twelve million)

Phase 2 (after migration to proprietary Blockchain solution based on Polygon) – maximum circulating supply: 400,000,000* (four hundred million)

*due to the fact that 22% of the total token supply (88,000,000) being allocated to the Proof of Stake consensus that can be distributed only after the migration to the proprietary Blockchain solution based on Polygon.

## 2.4. IVFAO SOFT CAP

The Issuer has established a Soft Cap for this IVFAO of 2,500,000 VAI Tokens, equivalent to 250 000 EUR (two hundred and fifty thousand euro). The Issuer shall provide an undertaking



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to source alternative funding in order to meet its minimum working capital requirements to continue to finance the Issuer's business growth in the event that the funds raised by means of the IVFAO and Private Sale are not sufficient to meet such minimum working capital requirements.

The Issuer undertakes to refund the issuing value of the VAI Token paid on subscription by the Participants in the event that the IVFAO Soft Cap is not reached by the end of the Initial VFA Offering. Once the IVFAO Soft Cap is reached, and notwithstanding the fact that the subscription period of the IVFAO may not have expired yet, the Issuer shall be free to start utilizing the proceeds collected from the sale of VAI Tokens through the IVFAO.

The IVFAO Soft Cap was based on the financial model, which outlines the minimum working capital required. Total expenditure during the first three years of operation (starting as from June 2019) is estimated to be at around 10.7 M EUR. Management is projecting that, ca. 46% of the said expenditure will be covered with funds collected from Private Sales. As per the date of this Whitepaper, 30% of the proceeds from the planned private placements were already collected. Management has also estimated that ca. 2% of the total expenditure will be financed from funds raised through the IVFAO. VAIOT is planning to launch two of its products by Q3 2021, and thus the rest (ca. 52%) will be internally financed through revenues in the second and third year of operations.

Given the funding already secured by VAIOT, as well as the financing planned to be raised through the Private Sales, the IVFAO Soft Cap was set at 250 000 EUR.

The business model was stress tested for adverse movements in revenue and cost assumptions. As a result, it was identified that the IVFAO Soft Cap of 250 000 EUR would result in a positive cash flow position along all projected years, even under a worst-case scenario.

It is worth mentioning that by the end of the financial year ending May 2020, VAIOT had already spent ca. 1.2 M EUR on this project. Going forward, VAIOT's management is projecting that in Q3 2020, a Minimum Viable Product (MVP) will already be in place, ready to be presented for early adopters.

The total expenditure includes the following cost categories:

- Solution development



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- Direct costs related to software development by third parties
- Individual costs of outsourced IT work specific to a given Business Line
- Cost of UX/UI optimization for VAIOT products (apps)
- Cost of market/consumer research for VAIOT own apps
- Product development employees and freelancers

- Marketing and Sales
  - Cost of marketing for VAIOT products
  - Cost of sales-related business trips
  - Cost of general marketing and PR
  - Sales and general marketing personnel
  - Sales representatives commission fees (success fees)

- Operational expenses
  - Costs of consulting, analytical and other preparatory works
  - Cost of maintenance of VAIOT products
  - IVFAO launch-related costs
  - Other administrative costs
  - Professional fees
  - Product maintenance personnel
  - Administrative personnel

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Part of these costs are directly related to the production of the product and therefore, they are considered as capital expenditure.

### 2.5. IVFAO HARD CAP

The Issuer has established a Hard Cap as a set maximum amount of VAI Tokens to be allocated for sale during and for the purposes of the IVFAO in accordance with Section VI.4 - TOKEN ALLOCATION. In terms of the said Section VI.4 – TOKEN ALLOCATION, the IVFAO Hard Cap is 2% of the Total Supply. Prospective Participants who wish to acquire VAI Tokens



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through the services of an intermediary, such as a DLT Exchange, should also take into account that a lower hard cap on VAI Tokens may apply when acquiring through such intermediary.

Please note that the IVFAO Hard Cap does not contain VAI Tokens sold in the Private Sale.

### 2.6. UTILIZATION OF FUNDS ONCE IVFAO SOFT CAP IS EXCEEDED

If the Issuer succeeds at exceeding IVFAO Soft Cap requirements, any additional funds will be utilized to bolster VAIOT's business efficiency. Such financial boost would allow VAIOT to:

- significantly enhance PR and marketing activity increasing the awareness of VAIOT's brand and products as well as supporting the generation of revenues, market presence, and user base;
- scale up VAIOT's sales team to expand revenue streams;
- shorten the time-to-market for VAIOT's products (especially those constituting Business Line 2 and Business Line 3, which in the future should be the cornerstones of the Issuer's market presence);
- speed up R&D works on new applications for VAIOT's proprietary technologies to start reaching earlier beyond the current 3-year operational plan;
- expand the VAIOT's team, increasing human potential gathered around sales, marketing, R&D, solution development and service delivery teams;
- amplify recognition of VAIOT's corporate brand and product brands, boosting traction in key markets through better understanding and addressing clients' needs;
- enter new markets with VAIOT's core products at a faster than planned pace;
- bring more training data for algorithms and add additional features.

### 2.7. EXCHANGE RATE OF THE VAI TOKEN

**VAI Token price:** 0,1 EUR (ten eurocents)



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## 2.8. LIFE-CYCLE OF THE IVFAO

Q2/Q3 2020 – Commencement of the registration process of the Whitepaper and private sale of the IVFAO.

H2 2020 –IVFAO, listing on a DLT Exchange and commencement of secondary market trading thereafter.

## 2.9. TIMEFRAME OF IVFAO

The IVFAO shall commence immediately after registration of this Whitepaper in terms of the VFA Act and shall continue for the maximum duration allowed under the said VFA Act. The Issuer reserves the right to end the IVFAO (public sale) prior to the end of the subscription period as herein indicated, at its own discretion notwithstanding that the IVFAO Hard Cap may not have been reached, provided that the Issuer shall not terminate the IVFAO before the subscription date is over in the event that the IVFAO Soft Cap has not yet been reached. The Issuer shall make an announcement to such effect through its website and social media channels.

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## 2.10. METHODS OF PAYMENT

Accepted methods of payment include Fiat money (EUR and USD), BTC, ETH and in case of acquiring VAI Tokens through the services of an intermediary authorized for such purpose by the Issuer, any other currencies, whether virtual or otherwise, accepted by such intermediary, provided that any payment methods accepted by the Issuer will be in line with Maltese laws and regulations against money laundering and the financing of terrorism.

The exchange rate for methods of payment other than EUR (before the DLT Exchange debut) will be calculated based on the price of EUR in relation to other cryptocurrencies. In the case of cryptocurrencies, the website https://coinmarketcap.com/ will be used as the source of the exchange rates. In the case of USD, the current EUR/USD exchange rate of the European Central Bank will be used.



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## 2.11. BONUSES APPLICABLE TO PRIVATE SALE ACQUIRERS OF VAI TOKENS

The Issuer reserves the right to sell VAI Tokens to acquirers of the said VAI Tokens through a Private Sale:

- at a price which may be different from that attributed to VAI Tokens offered by virtue of the IVFAO;
- at a discount or at a premium when compared to VAI Tokens offered by virtue of the IVFAO; and/or
- applying any bonus they may deem fit, which may not be applicable to Participants.

## 2.12. GEOGRAPHICAL RESTRICTIONS

The VAIOT Website, including the mechanisms used for IVFAO and VAI Tokens, are not offered for use to natural and legal persons, having their permanent residence or their seat of incorporation in the following countries: USA, Germany, Puerto Rico, US Virgin Islands, Canada, China, Singapore, Afghanistan, Central African Republic, Cuba, Democratic Republic of the Congo, Eritrea, Iran, Iraq, Libya, North and South Korea, Somalia, South Sudan, Sudan, Yemen, Zambia.

The geographical restrictions will be implemented through:

- KYC procedures performed by a specialist, reputable KYC company, in line with the VAIOT's AML & CFT Policy,
- geo-blocking of incoming traffic from Restricted Areas as implemented on the VAIOT servers;
- legal measures embedded in IVFAO (including this Whitepaper, the terms and conditions of the IVFAO, and any other ancillary agreements as specified herein).

**Restrictions on the free transferability of VAI Tokens**: Once admitted to trading on one or more DLT Exchanges, VAI Tokens shall be freely transferable provided that the prospective Tokenholder does not have their habitual residence or their seat of incorporation in a Restricted Area, and provided that all applicable AML and CFT rules are adhered to.


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## 3. OTHER, GENERAL TERMS & CONDITIONS OF THE IVFAO

If potential Participants buy VAI Tokens from the VAIOT website (public sale) in the frame of the IVFAO, the following documents shall be binding on said Participants:

- The privacy policy,
- The sale of VAI Tokens agreement,
- The Whitepaper.

All of these documents will be available on the VAIOT Website upon commencement and during the IVFAO.

Application of pre-emptive rights on the part of holders of VAI Tokens: N/A

Unsold Tokens:

Any VAI Tokens which are not subscribed for in the IVFAO or in any way not taken up will belong to the Issuer and may be used, utilized, and/or distributed as VAIOT deems fit at its sole discretion.

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## 4. TARGETED INVESTOR BASE

A Participant who does not qualify to be considered as an Experienced Investor shall not exceed the amount of 5,000 EUR (five thousand euro) when participating in the Issuer's Initial VFA Offering over any 12 months.

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VAIOT shall treat a Participant as an Experienced Investor if such Participant declares that:

- they have already participated in other offerings of VFAs; and
- they have invested in VFAs more than 10,000 EUR (ten thousand euro) or its equivalent; and
- they possess the necessary experience, knowledge, and expertise to make their own investment decisions and properly assess the risks involved.



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VAIOT shall also treat the following as Experienced Investors :

- entities which are required to be authorized or regulated to operate in the financial markets;
- Large undertakings meeting two of the following size requirements on a company basis:
  - balance sheet total: 20,000,000 EUR,
  - net turnover: 40,000,000 EUR,
  - own funds: 2,000,000 EUR;
- national and regional governments, public bodies that manage public debt, central banks, international and supranational institutions such as the World Bank, the IMF, the ECB, the EIB, and other similar international organizations;
- other institutional investors whose main activity is to invest in VFAs, including entities dedicated to the securitization of assets or other financing transactions.

Furthermore, VAIOT shall treat a Participant as an Experienced Investor if all of the following criteria are satisfied:

- the Issuer will undertake an adequate assessment of the expertise, experience, and knowledge of the Participant, and this assessment gives reasonable assurance, in the light of the nature of the transactions or services envisaged, that the Participant is capable of making their own investment decisions and of understanding the risks;
- in the course of the assessment referred to in point (a) above, as a minimum, two of the following criteria shall be satisfied:
  - the Participant has carried out transactions, in significant size, on the relevant market at an average frequency of 10 per quarter in the previous four quarters,
  - the size of the Participant's Virtual Financial Asset portfolio, defined as including cash deposits and Virtual Financial Assets exceeds, 500,000 EUR or its currency equivalent,
  - the Participant works or worked in a position, which requires knowledge of the transactions envisaged,
  - the Participant has worked in the financial sector for at least one year in a professional position;

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- the following procedure is followed:
  - the Participant shall state in writing to the Issuer that they wish to be treated as an Experienced Investor,
  - the Issuer will give such Participant a clear written warning of the protections and investor compensation rights the Participant may lose, and
  - the Participant will state in writing in a separate document from the contract, that they are aware of the consequences of losing such protections.

## 5. FUNDS ALLOCATION

### Purpose of the issue

To ensure funding for the development of the VAIOT Project, including, but not limited to, technology development, R&D, recruitment and team enhancement, PR & marketing, sales as well as product development and maintenance.

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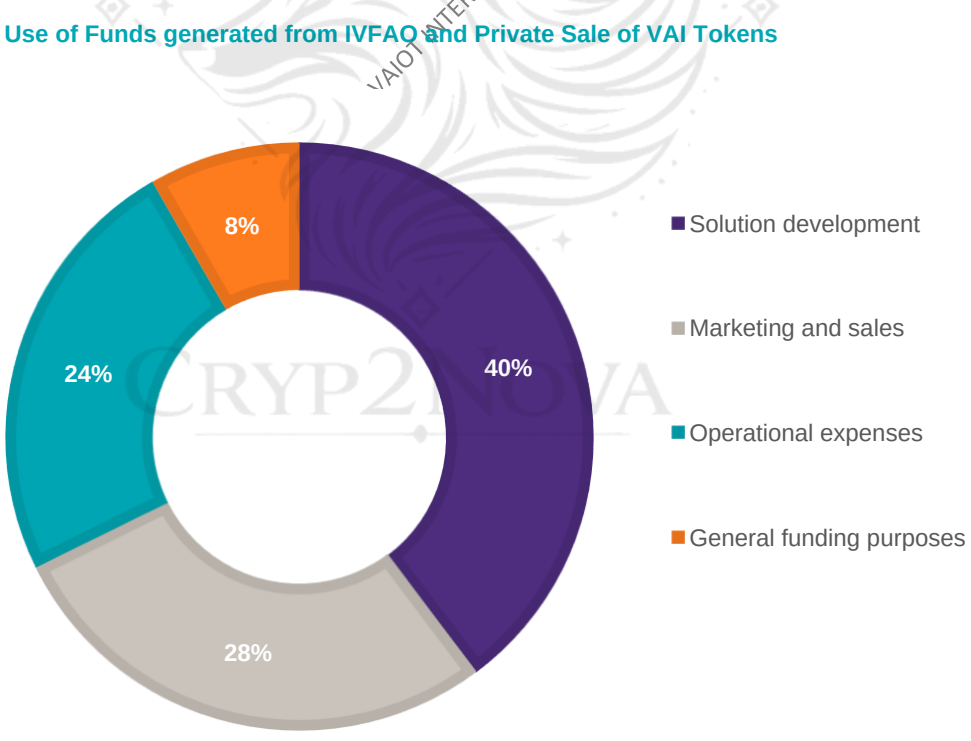



*Figure 29: Use of Funds generated from IVFAO and Private Sale of VAI Tokens*





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**40% - Solution development**

40% of the funds raised will be allocated to the costs directly related to developing VAIOT solutions. This includes areas such as:

- R&D;
- software and product development (including third party services such as software customization services by IBM, UX/UI design and optimization);
- human resources working directly on product development (Blockchain development, AI development, cryptography, testing, cybersecurity, project management, product design and management, graphical design);
- hardware and software required for product development;
- market research;
- product maintenance (service delivery team, technical administration).

This category also includes partnerships with top technological companies, universities and research facilities, internal R&D projects and processes for technology development, recruitment of product development-related staff and advisors (including employment of top-class AI and Blockchain specialists), physical infrastructure and software acquisition, acquisition of the required intellectual property required, etc.

**28% - Marketing & Sales**

Informing a wider audience about the project and solutions developed generates costs related to PR, marketing, and sales processes. These are crucial for customer acquisition and for ensuring the proper rate of return for Tokenholders. Funds allocated to this category will cover such expenses as generated by:

- marketing and PR staff salaries;
- sales staff salaries;
- market research services;
- marketing and PR external services in line with VAIOT's marketing strategy and quarterly plans;
- other sales-related expenses (actions required for effective sales processes),;
- conferences, and events.



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**24% - Operational expenses**

A part of the funds raised will be allocated to operational expenses generated by the daily business operations. These include, among others:

- hardware and software (acquisition and maintenance);
- management and administrative staff salaries;
- accounting and banking fees;
- external general advisory services;
- office rental and maintenance (cleaning, security, etc.);
- purchase of supporting goods and services;
- business travel expenses;
- general administrative costs;

**8% - Reserve**

Due to the highly innovative nature of the project and changing business environment, a part of the funds raised will be kept as a reserve for unexpected expenses and potential future opportunities.

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## 6. DELIVERY OF THE VAI TOKENS - METHODS AND TIME-LIMITS

**VAI Tokens bought during, and as part of, the Initial VFA Offering**

A. In the case of acquiring through an intermediary authorized for such purpose by the Issuer, the respective VAI Tokens will be sent to the Participant's DLT Exchange account. Time-limits for the delivery of VAI Tokens will be specified by the transparent rules governing the process established by the said intermediary.

B. In any other case, VAI Tokens will be distributed to the wallet address specified by the Participant during the KYC procedure. If bought using ETH, VAI Tokens will be transferred with the use of a Smart Contract. If bought using Fiat (EUR, USD) or BTC, VAI Tokens will be transferred manually based on the respective wallet address or bank account added to the whitelist during the KYC process. The time limit for the delivery in this case is 10 business days.



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The VAI Tokens will be held in the Smart Contract and released once the IVFAO Soft Cap is reached. If the IVFAO Soft Cap is not reached until the end of the IVFAO, the funds will be returned in full to the Participant. In each of the above cases, VAI Tokens will be available to send/trade between users from the date specified as the end-date of the token sale, provided that the IVFAO Soft Cap is reached.

A subscription for VAI Tokens in terms of this IVFAO shall be deemed complete upon the prospective Participant having successfully completed all AML and CFT procedures and funds being received as described herein by VAIOT or any third party to which VAIOT may have delegated such function. Participants who have satisfied the aforementioned shall be eligible to the VAI Tokens in accordance with their subscription on a first come first-served basis.

**The timeframes for VAI Tokens to be used by the respective IVFAO acquirers thereof**

A. In case of the public sale performed by one or more DLT Exchanges, or other intermediary authorised to sell VAI Tokens by the Issuer, VAI Tokens will be tradeable:
    a. after the successful completion of the public sale by the respective DLT Exchange or other intermediary authorized to sell VAI Tokens by the Issuer
B. In case the public sale is carried out by the Issuer, VAI Tokens will be tradeable:
    a. Peer-to-peer after the completion of the IVFAO; and
    b. On the secondary market of the DLT Exchange after the VAI Tokens are admitted to trading on such DLT Exchange following completion of the IVFAO.
C. In case the Tokenholder would like to use VAI Tokens to buy services on the VAIOT Platform, VAIOT intends to enable such functionality following migration to the proprietary Blockchain solution.

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The Tokenholders will be updated on the respective timings via the newsletter. They can also contact VAIOT's concierge (contact details available on the Website).

## 7. RETURN OF FUNDS IF THE IVFAO SOFT CAP NOT REACHED

Participants will be able to get their contributions back if the IVFAO Soft Cap is not reached at the end of the Initial VFA Offering.



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**Public sale (IVFAO) investors**

In case the IVFAO Soft Cap is not reached the Issuer shall require that the funds are returned to the Participants, or provide alternative mechanisms for the return of such funds.

A. In case of the public sale performed by one or more DLT Exchanges, or other intermediary authorized to sell VAI Tokens by the Issuer, the funds will be returned to the Participants based on the mechanism agreed with the intermediary. The refund shall be done within 90 days from the date of obtaining funds from the Participant. The Participants will be notified of how the refund mechanism will work.

B. Direct public sale via the VAIOT Website

1. As a first step, notifications informing the Participant about the timing of the refund will be sent within 60 days after the initial VFA offering is abandoned.
2. The funds will be transferred within 90 days from the Issuer's bank account to the bank accounts of the Participant.
3. The value of the refund will correspond to the number of VAI Tokens remaining in the Participant's wallet.
4. If the initial transfer was done using FIAT money, the same currency will be used for the refund.
5. If the initial transfer was done using BTC, ETH (or in case of using intermediaries to acquire VAI Tokens, any other cryptocurrency supported by such intermediary in accordance with the terms herein laid down), the refund will be done in FIAT currency based on the exchange rate (cryptocurrency to FIAT) on the date the amount was credited to the Issuer's wallet address.

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# VIII. PROJECT ROADMAP

Please find below a detailed description of past and future project milestones and project financing rounds.

**2017: The idea of VAIOT is born**

A group of researchers and technology enthusiasts comes together to work on the technology of Intelligent Contracts and the VAIOT product concept.

**2018: The founding of VAIOT**

VAIOT is founded; technology development and the concept creation process accelerate. Development and business teams are formed.

**H1 2019: VAIOT joins the world's first integrated framework for ICO regulation**

The company is incorporated in Malta to become a part of the world's first integrated framework for ICO regulation.

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**Q2 2019: Launch of the first, private round of funding for the VAIOT Project**

The first round of funding successfully launches, bringing 1,500,000 EUR in the initial investment round; development of the VAIOT Project accelerates.

**H2 2019 – Q2 2020: VAIOT seeks to register its Whitepaper in accordance with the VFA Act**

Preparation of the required documentation for VAIOT to become one of the first companies to carry out an Initial Virtual Financial Assets Offering (IVFAO) under Maltese regulations.

**Q4 2019: VAIOT-IBM project launched**

VAIOT and IBM launch a development project to produce VAIOT's MVP.

**Q2/Q3 2020: Private phase of the sale of VAI Tokens; VAIOT's Whitepaper is registered with MFSA**

VFA status to be obtained and the private phase of the token sale to be completed.



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**Q3 2020: VAIOT's Initial VFA Offering is launched once the Whitepaper is approved by MFSA**

**Q3 2020: VAIOT application MVP to be presented**

The initial phase of the VAIOT-IBM cooperation to be completed.

**H2 2020: Extending the Intelligent Contracts database and working on the launch of the Virtual AI Sales Assistant**

Extending the list of agreements forming the database for the contract generation engine. Virtual AI Sales Assistant (VAIOT's business line 1) prepared and ready for market launch.

**Q2 2021: Virtual AI Sales Assistant**

**Business Line 1**: tailor-made mobile app for companies seeking new, digital sales channels utilizing the Intelligent Contracts component. Crucial for the development of the AI Legal Assistant (data needed to improve algorithms).

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**Q3 2021: Virtual AI Insurance Aggregator & Broker**

**Business Line 2**: B2C mobile app allowing consumers to compare and buy insurance products from different providers using voice interface and AI-based Intelligent Contracts developed by VAIOT. Crucial for the development of the AI Legal Assistant (data needed to improve algorithms).

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**Q3 2022: Virtual AI Legal Assistant for Consumers (flagship application)**

**Business Line 3:** B2C/C2C mobile app enabling consumers (incl. private entrepreneurs and micro/mini enterprises) to create Intelligent Contracts utilizing a natural user interface, with advanced AI serving as a personal legal assistant for creating contracts and negotiating them in real-time between the parties involved; to be used for drafting other legal documents (e.g., testaments).



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**Q1 2023: Polygon Mainnet Launch**

**Q4 2023: Intelligent Contracts Interoperability**

The development of AI mechanisms enabling the use of other Blockchain networks for data exchange, transmission, processing, and storage.

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# IX. THE ISSUER

VAIOT LIMITED (i.e. the Issuer of the Virtual Financial Asset) is a private limited liability company incorporated under the laws of Malta on 6 December, 2018 for an indefinite period of time, having its registered office at Cornerstone Business Centre, Suite 1, Level 2, 16th September Square, Mosta MST 1180, Malta and registered with the Malta Business Registry under the number C 89746 ("**the Issuer**").

The Issuer's majority shareholder is VAIOX HOLDING LIMITED, a private limited liability company, incorporated under the laws of Malta on 11 October, 2018 for an indefinite period of time, having its registered office at Cornerstone Business Centre, Level 2, Suite 1, 16th September Square, Mosta MST 1180, Malta and registered with the Malta Business Registry under the number C 88754.

The Issuer was created to implement the VAIOT Project and to develop the underlying technology to support this project. The Company is pre-revenue and has a limited operating history.

The Issuer's principal activity is to develop and operate the VAIOT Platform (including software development, PR and marketing, sales, development of proprietary technology). The Issuer is not involved in any legal proceedings having important an effect on the Issuer's financial position.

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# 1. ORGANISATIONAL STRUCTURE

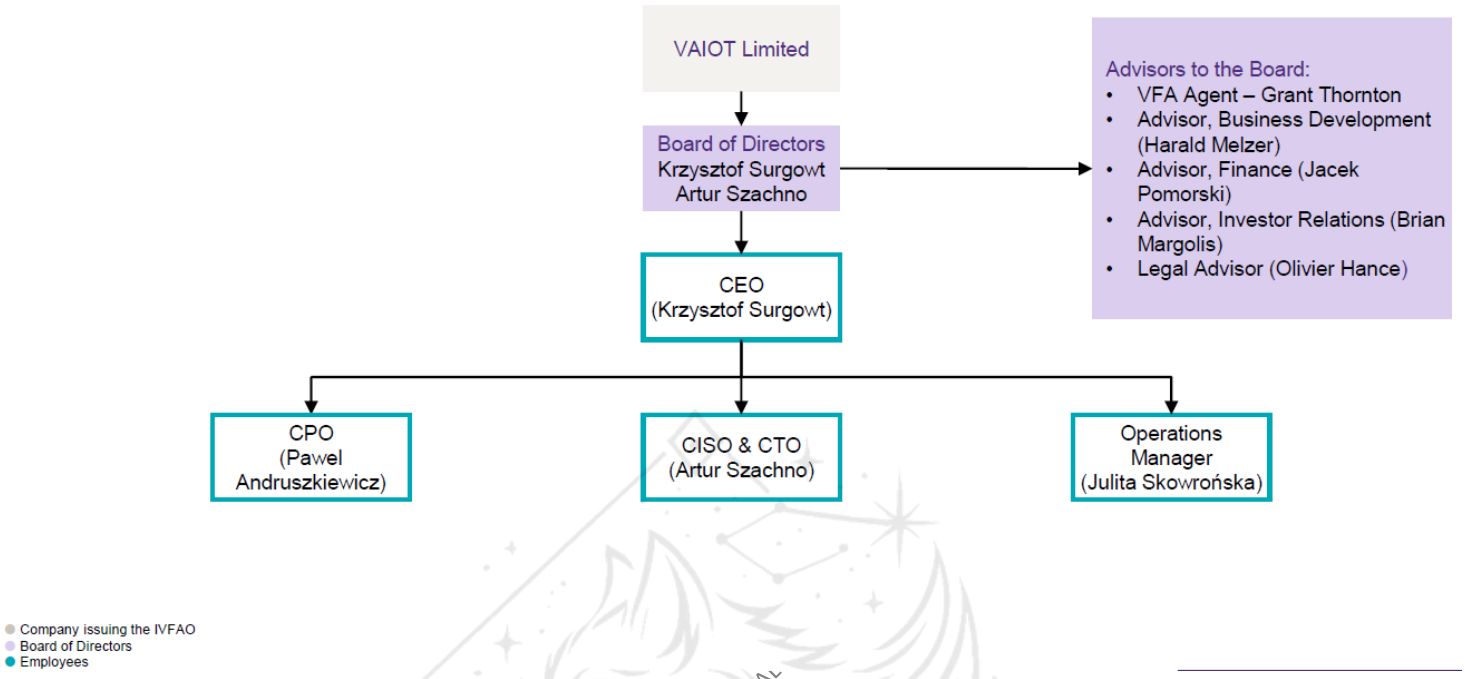



*Figure 30: VAIOT's organizational structure – Board, Advisors, and Managers*

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## General project management and solution development structure

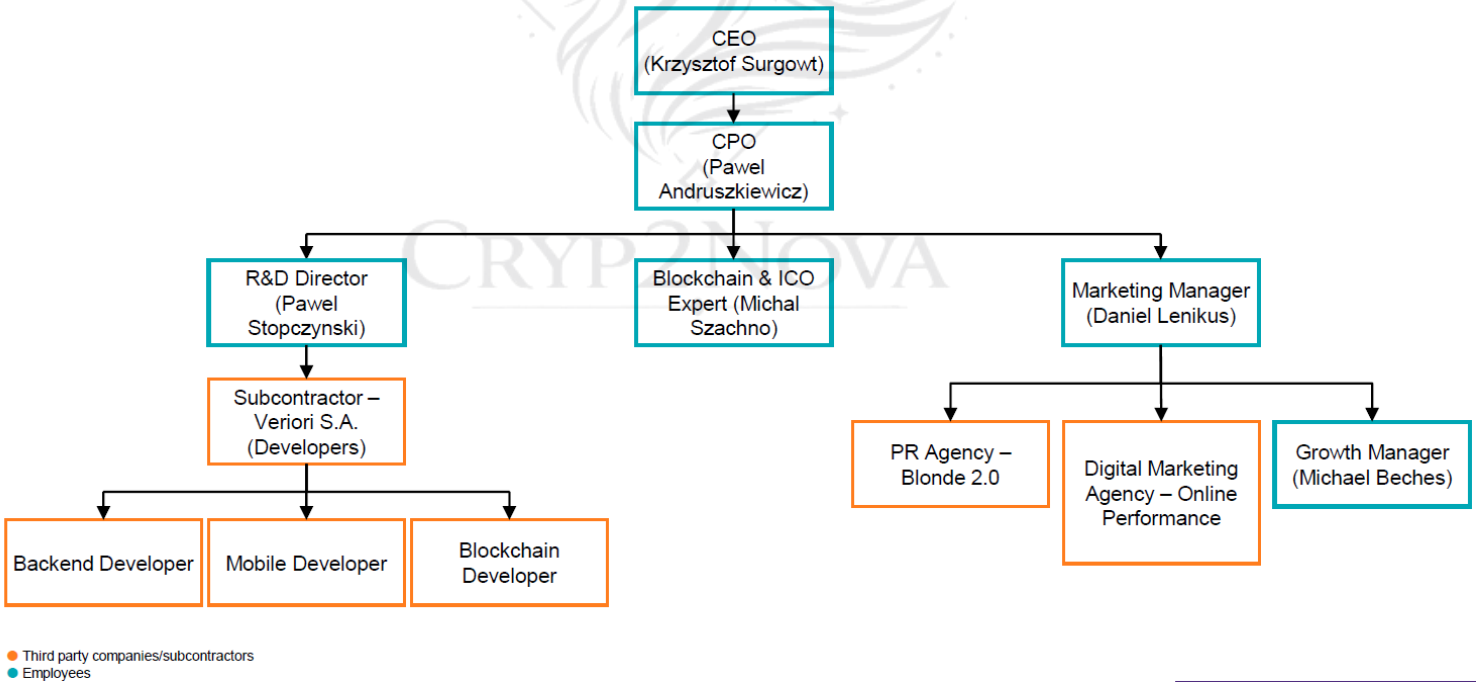



*Figure 31: VAIOT's organizational structure – general project management and solution development*



Intelligent Services.
Just say the word.
www.vaiot.ai
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**Information security, technology management and operations structure**

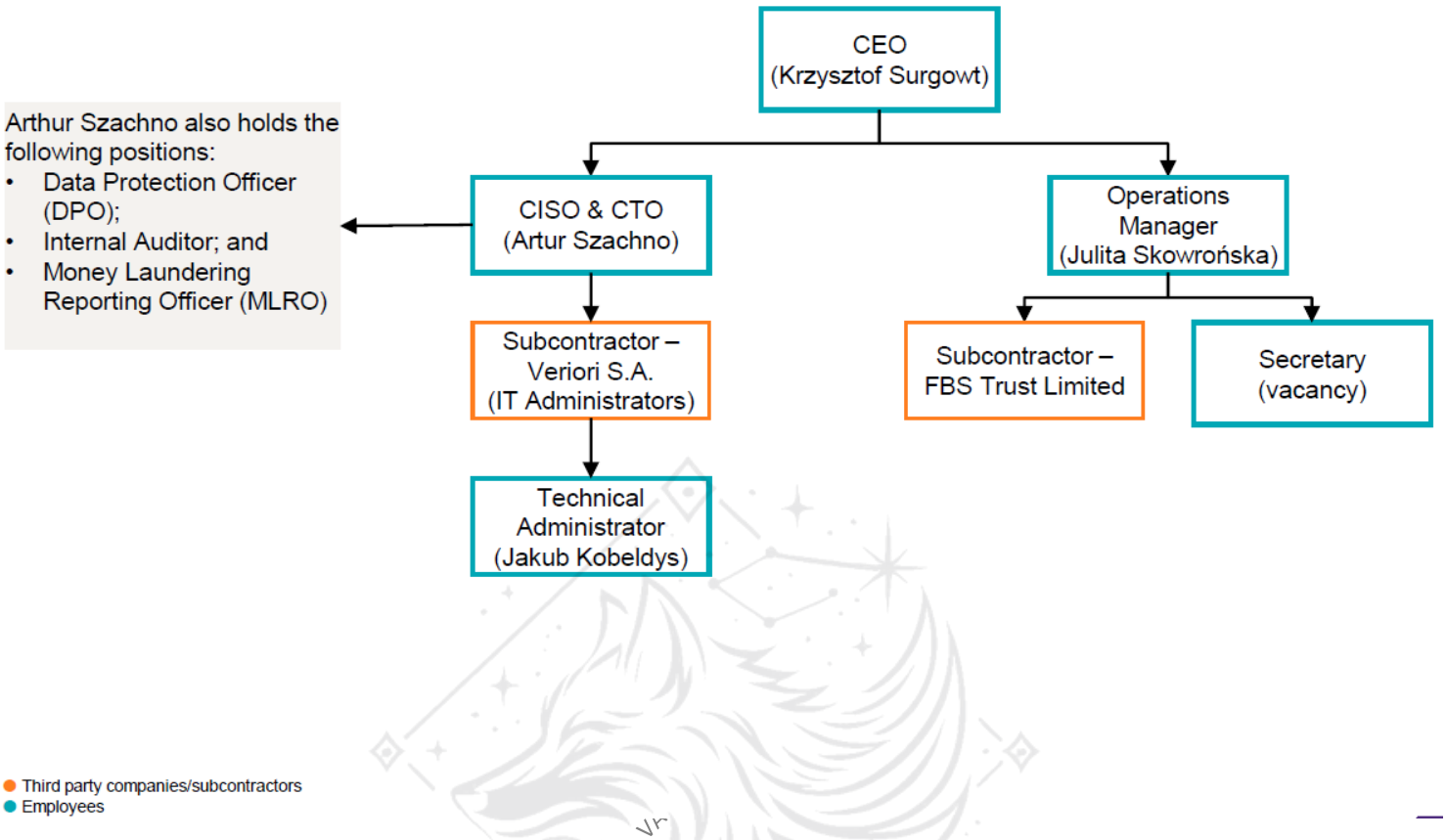



*Figure 32: VAIOT's organizational structure – information security, technology management, and operations*

## 2. THE MANAGEMENT - ROLES AND RESPONSIBILITIES



Responsibilities at the Issuer: **Krzysztof Surgowt – Director & CEO**

With over three decades of experience in managing innovative projects and high-profile human resources, Christoph Surgowt offers a unique blend of leadership, vision, and knowledge as well as strategic thinking about innovative business worldwide.

As the Co-founder, CEO and Director of VAIOT Limited, Christoph is responsible for running all facets of the business, supported by a proven executive management track record in driving sales growth in the IT and media industry.



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Before joining VAIOT, Christoph acted as the Chief Executive Officer for USECRYPT S.A. From mid-2015 until 2018, he was responsible for the entire operational management structure and all sales and marketing activities, with a particular focus on the development of a new generation IT encryption platforms called UseCrypt Safe and UseCrypt Messenger, aimed at both the B2B and government sectors.

Previously, he served for fifteen years as the Managing Director of ASTRA Poland and subsequently ASTRA CEE, belonging to Luxembourgish SES – the world leader in satellite operations, operating the biggest satellite fleet worldwide.

Christoph has also held executive leadership roles in many other international companies.

After more than a decade at Polish Public Television, he decided to enter the private sector, joining the German company Kathrein KG – one of the first world leaders in satellite hardware manufacturing.

Subsequently, he became Deputy Managing Director of the South African/Dutch Multichoice EE enterprise. Christoph was chiefly responsible for the marketing and distribution of FilmNet, the first Pay-TV channel in Europe.

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- general operational management; including ongoing communication with all important stakeholders, particularly investors;
- supervising the implementation of long-term strategy and operational plans;
- co-creating and supervising the Issuer's marketing strategy and its implementation, including guidance and ongoing advice for marketing staff;
- supervising important contract negotiations, forming strategic partnerships and liaising with the Issuer's chief advisors;
- close monitoring of progress towards achieving established milestones;
- controlling the Issuer's financial management;
- direct involvement in the recruitment of key employees;
- supervision over general project management by the Chief Project Officer (CPO).



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**Artur Szachno – Director & CISO; acting CTO**



With over two decades of experience in the military as a professional soldier and technology expert, including more than ten years in the Special Forces as a Communications Engineer and ITC Expert, and having completed three deployments in Afghanistan, Artur Szachno offers a unique blend of engineering, communication technology, and security knowledge, combined with significant experience in innovative ITC business development.

As the Director of VAIOT Limited, Artur is responsible for the technical aspects of the business, having a proven technological track record of more than 20 years of experience in military-grade ITC.

Before joining VAIOT, Artur was Technology Director at VERIORI S.A., with responsibility for the entire ITC operational management, focusing on the implementation of a new generation ITC systems with 24/7 availability worldwide.

As a member of Polish Special Forces, during his three deployments in Afghanistan, he was responsible for ITC management and multinational logistic SOF support as Liaison Officer.

Subsequently, Artur moved to the civilian sector working as the Senior Specialist in special solutions and technical security, responsible mainly for secure communication solutions and tailormade security projects. After that, he returned to military SOF for a 3-year contract, responsible for cybersecurity and ITC systems development and maintenance. He then made a return to the civilian sector, becoming Implementation Director at USECRYPT S.A., where he was responsible for product implementation and support.

Leveraging his extensive training and experience, Artur has also obtained the international CISA Certification in security audits by ISACA.

<u>Responsibilities at the Issuer:</u>

- general Strategic Management and Supervision:
  - strategic supervision over the technical domain,
  - strategic supervision of product and software development processes,
  - strategic supervision and participation in the administration, architecture design and implementation of VAIOT's technical infrastructure;
- leading and managing the design, development, implementation, operation, maintenance and monitoring and control over the information security area, including coordinating security



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audits and related preparation processes, as well as the implementation of cybersecurity framework according to, among others, the Systems Audit Control Objectives;

- approving of the Issuer's system controls and risk migration strategies;
- maintaining and controlling the proper information security organizational structure, reporting processes and execution of procedures;
- scheduling and executing internal audits in the area of information security and business continuity;
- acting as the Data Protection Officer (DPO) to ensure proper execution of GDPR rules and requirements;
- active participation in the recruitment processes and role delegation;
- participation in the product and concept design processes;
- participation in meetings on both strategic and operational levels, including conferences and events.

**Pawel Stopczynski – R&D Director**



Researcher and R&D projects coordinator with a cybersecurity background. At VAIOT, leading and executing research and development activity as well as acting as a Product Owner.

Previously an R&D Director and Co-Founder at Veriori (www.veriori.com), a next-generation product authentication company utilizing Blockchain and Artificial Intelligence. Responsible for concept design and implementation of Veriori's products and technology.

Before Veriori, Pawel was the R&D Director and Co-Founder at UseCrypt (https://usecrypt.com/), where he was responsible for technology development and implementation of UseCrypt products. In 2009, he developed an innovative encryption method with the use of encryption key sharing. This technology is the foundation of the solutions offered by UseCrypt. Since 2004, he has been involved in the development of eighteen IT projects (Poland, UK), mainly in the private sector. Speaker at several IT conferences and organizer of two TEDx conferences. Awarded, among others, with a gold medal at the Concours Lépine 2019 International Innovation Fair 2019 in Paris and a gold medal of the Minister of Defense of the French Republic for cryptographically secured 2D codes.



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**Pawel Andruszkiewicz – CPO (Chief Project Officer)**



IT Project Manager & Operations Manager with Information Security, Audit & Compliance and Transition & Transformation (T&T) background.

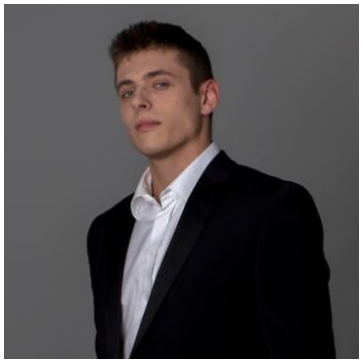
At VAIOT responsible for the overall operational project management, coordination across all functional areas, and implementation of the project management framework and good practices.

Previously acted as the Project Management Director at Veriori S.A., where he was responsible for leading and managing IT & development projects (including international clients from France, Luxemburg, etc.).

As Project Manager led international T&T, R&D, and audit/compliance projects for companies such as Atos or BNP Paribas and worked with e.g. Royal Mail Group, Aviva, Nomad Foods. Managed projects in the area of network infrastructure, information security, and systems development (worth over 5 million EUR) for institutional clients in the UK and Poland. Managed project teams comprising up to 30 professionals.

He previously managed Information Security & Audit structure delivering internal and external services, including the role of Internal/External Auditor and management of Infosec projects.

**Michal Szachno – Blockchain & ICO Expert**



An early adopter of blockchain technology and digital assets investor since 2015. Specialist in blockchain technology and the ICO industry. From the beginning of his professional career, he has worked on systems utilizing distributed registers for various business applications such as e.g. product and document authentication. He specializes in token economics modeling, product design, and management, trading strategies as well as the development of ICO marketing strategies. In the supported projects, he focused on the effective use of technology along with ensuring a high level of usability.

Holds several years of experience in conducting IT training, including the creation of curricula and organization of training programs. Skilled in software development for industrial automation solutions. Before starting his professional career, he was awarded in several technical competitions, among others, by the J.P. Morgan Foundation for inventiveness and innovation.



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### Julita Skowrońska – Operations Manager



An experienced professional responsible for operational activity management and a lawyer specializing in the field of corporate law, personal data protection law (GDPR), and new technology law.

For the last two years she acted as a proxy and legal advisor to the management board in the joint-stock company Veriori (www.veriori.com). Previously at UseCrypt S.A. (www.usecrypt.com), she was responsible for supporting product development in regards to GDPR, GDPR training for clients, as well as legal services and partnerships. Since 2009, she runs her own business, providing legal services, training, management, and consulting services with a special focus on startups.

### Olivier Hance – Legal Advisor



Professor Olivier Hance, Ph.D, MBA, TEP, Esq. is Attorney (Luxembourg, Paris & Brussels) and Partner at Hance Law. He specializes in Corporate Law, Financial Law (Private Equity & Funds) Corporate & International Taxation. Hance recently launched the "International Association of Non-Executive Directors". He also authors and teaches on International Practice of Business & Tax Law and Entrepreneurial Finance. Olivier Hance also sits on many boards of financial holdings and funds as a non-executive director.

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### Harald Melzer – Marketing and Business Development Advisor



Experienced executive skilled in Business Development, Mergers & Acquisitions, Public and Corporate Relations. Worked as an expert with the EU Commission.

For many years involved, on both the operational and strategic levels, in the area of PR and Communications Management for such companies as CGE, SES Satellites, or AdSatCom. Held the role of Vice-president for Corporate Communications at Bank Sarasin. Worked as a Director of Global PR at SES Networks. In recent years providing advisory services for businesses around Europe.



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### Brian Margolis – Business Development Advisor



Brian A. Margolis is a strategy consultant with a focus on start-ups in the media, healthcare, and emerging technologies. For over twenty-five years, he worked in business and corporate development for international firms such as News Corporation and Cisco. He began his career in mergers and acquisitions at Lazard Frères in New York and Morgan Grenfell in London. He is a B.A. graduate of Princeton University.

### Jacek Pomorski – Advisor, Finance and Business Development



Head of Advisory Board and former (2014-2018) CEO of NEUROHM, a global technology provider in the field of applied consumer neuroscience. NEUROHM develops and licenses throughout the world innovative methods, metrics and tools that are being applied in market research, sales, HR and CX.

Prior to joining NEUROHM in 2013, Jacek spent 7 years in retail banking working for several institutions in Poland, first as a financial markets and macroeconomic analyst, then as project leader and product manager. In 2007 he was appointed Director of Retail Products Department in Postal Bank and since then he has held managerial positions in retail banking as head of product and business process development units. He was also responsible for running sales department and managing the whole retail banking division of a medium-sized bank.

Jacek holds a MSc degree in Finance and Banking and a MSc degree in International Economic Relations, both from the Warsaw School of Economics.



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## 3. PARTNERS

### VFA Agent

Grant Thornton Limited

Fort Business Centre, Level 2

Triq L-Intornjatur, Zone 1

Central Business District

Birkirkara CBD1050, Malta

Grant Thornton Limited (hereinafter referred to as "Grant Thornton") forms part of Grant Thornton Malta (hereinafter referred to as the "Firm"), a member of the Grant Thornton International network which was set up in Malta in the mid-1970s and has grown into the country's leading firms. The Firm presently has a complement of approximately 95 people including partners and directors and a multi-disciplinary team of advisors, auditors, tax specialists, legal professionals and IT specialists. The Firm's client base includes several public interest entities, international and local groups of companies and smaller organizations operating in various industry sectors. Grant Thornton is listed as a Corporate Advisory Agent on the Prospects market and it also helps individuals, to get financing by directly linking them with potential shareholders. Grant Thornton was amongst the first group of companies to be registered by the Malta Financial Services Authority as a Virtual Financial Assets ("VFA") Agent on 13 May 2019, enabling Grant Thornton to support both VFA issuers in the registration of ICO whitepapers as well as VFA service providers in their licensing process.

### Financial & Systems Auditor

FACT Group

Cornerline, Dun Karm Street,

Birkirkara, BKR9039. Malta.





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FACT group is a multidisciplinary and forward-looking small group of entities offering a wide range of professional & independent financial services and advice ranging from accountancy, assurance, business advisory, local and international tax planning and compliance, corporate finance, management and legal support work, company formation & re-domiciliation, back-office services, mergers and liquidations, staff recruitment, IT assurance & consulting work.

FACT Audit

Audit and assurance services, which are conducted through FACTAudit, a practice within FACT group, form a major part of the work the company does for their clients on a continuing or ad hoc basis. The team is particularly trained and experienced in the application of International Standards on Auditing (ISAs), International Financial Reporting Standards (IFRSs) as adopted by the EU and General Accounting Principles for Small and Medium Entities (GAPSME). Audit services are mainly composed of external statutory financial audits, the main scope of which is to form an opinion on the financial statements of a company. However, the statutory audit service is not limited to this function as our assurance team communicates any relevant audit findings to those charged with governance and offer recommendations to improve internal controls and/or accounting systems, in line with the overall FACT group policy of providing a value-added service.

FACT Technologies

FACT Technologies Ltd is an entity that forms part of FACT Group and specializes in information systems assurance and information security. Its aim is to assist companies that are looking at improving their operations, processes, controls, and standards when it comes to the use of IT in their businesses. The main service industries are the gaming and financial services industries, for whom the company carries out specialized regulatory-related audits and other information security exercises to ensure compliance with legal requirements and proper awareness of how information security is managed. The team consists of experienced professionals in information assurance, pentesters, and security auditors.

**Legal Advisors**

Hance Law Avocats S.à.r.l.

3A, Sentier d'Esperence,



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L-1474, Luxembourg

For many years Hance Law firm and its lawyers have provided effective legal advice for individuals and corporate businesses in respect to incorporation, investment funding, asset protection and raising money for projects. Their lawyers are specialized in Securitization, Structured Finance and Capital Markets, Innovation, IP and Technology, Immersive Technology, FinTech, RegTech, InsurTech, Real Estate and Construction, Investment Funds, Cryptocurrency, Crowdfunding, ICOs, Crypto-Funds, Blockchain, Public Law and State Affairs (Public Private Partnerships, Investment Treaty Arbitration, Advising States on the Regulatory Compliance and Support for Legislation Drafting, Litigation and Alternative Dispute Resolution (ADR) (Commercial Arbitration and other methods of ADR).

**Money Laundering Reporting Officer (MLRO)**

Artur Szachno – Director & CISO of VAIOT

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# X. INTELLECTUAL PROPERTY RIGHTS ASSOCIATED WITH THE OFFERING AND PROTECTION THEREOF

The term (i) "Intellectual and Industrial Property Rights- IPR" shall cover any and all of the following: (A) patents, utility models and applications therefor (including provisional applications, certificates of invention and applications for certificates of invention) and divisionals, continuations, continuations-in-part, patents of addition, reissues, renewals, extensions, registrations, confirmations, re-examinations and equivalents thereof throughout the world (collectively, "Patents"), (B) trade secrets, know-how, invention disclosures, proprietary information, inventions, discoveries, improvements, technology (including, without limitation, allograft, and xenograft technology), technical data, formulas and research and development, whether patentable or not (collectively, "Trade Secrets"), (C) trademarks, service marks, trade names, trade dress, logos, commercial symbols, internet domain names, registrations and applications for any of the foregoing and the goodwill associated with any of the foregoing (collectively, "Trademarks"), (D) copyrights, mask works, derivative works, integrated circuit topographies, registrations and applications thereof, and equivalents thereof throughout the world (collectively, "Copyrights"), and (E) other intellectual property, industrial property and proprietary rights and all applications, registrations and grants related thereto; (ii) "IP Contracts" shall mean all contracts or agreements to which the Company or any of its Subsidiaries is a party or beneficiary that assigns, sells, grants, or otherwise conveys (each individually, an "Assignment") or licenses, waives, options, covenants not to enforce or otherwise obligates (each individually, a "License") any rights under, in or to any Intellectual Property; (iii) "Registered Intellectual Property" shall mean any and all Intellectual Property that is the subject matter of an application, election, designation, certificate, filing, registration, recordation, acknowledgement, document or other communication issued by, filed with, or recorded by any Governmental Entity or other Person primarily responsible for issuing, filing or recording any of the foregoing (such Governmental Entity or other Person, a "Registration Authority"); (iv) "Owned IP Property" shall mean all Intellectual Property in which the Company or any of its Subsidiaries has an ownership interest; (v) "Licensed Property" shall mean all Intellectual Property that is licensed to the Company and its affiliates.

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The VAIOT Platform consists mainly of software. Software is a form of algorithm that can be installed and run in computers and other computer-like devices for the purpose of providing certain utilities to its users. A software cannot be protected by the legal means available for patents, as it is a combination of technical and mathematical codes that give the effect of images, moving images, sound and content and it is considered as intellectual property. Since intellectual property rights are considered to be obtained automatically upon the result of the creation of the intellectual work (usually a software) in order to be fully protected by means of deposition which serve as proof of its date of existence, which can be linked with a specific trademark which provides for an industrial property right.

VAIOT has made its best effort to safeguard its intellectual property rights on the VAIOT Project. More specifically, its development team made use of open-source software for which VAIOT has obtained a license to Derivative Works. As software cannot be registered under the patent law, but it is considered to be automatically protected upon its creation, the only way to register any Derivative Works or original software works is by registering them under a specific trademark. VAIOT has executed all documents required to apply for, register, perfect, obtain or enforce any ownership and Intellectual Property Rights in or pertaining to any such Derivative Works, including, without limitation, any patent applications or copyright registrations, before starting the exploitation of such works with the signature of license agreements providing for specific remuneration rights (loyalties) limited in place, time, application or acquiring the whole ownership by the provision of a lump sum.

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# XI. APPLICABLE TAX REGIME

## 1. GENERAL

Participants and prospective Participants are urged to seek professional advice as regards both Maltese and any foreign tax legislation which may be applicable to them in respect of the VAI Tokens, including their acquisition, holding, disposal and redemption for services. The following is a summary of the anticipated tax treatment applicable to token holders in so far as taxation in Malta is concerned. This information does not constitute legal or tax advice and does not purport to be exhaustive.

The information below is based on an interpretation of tax law and practice relative to the applicable legislation, as known to the Issuer at the date of the Whitepaper. Investors are reminded that tax law and practice and their interpretation as well as the levels of tax on the subject matter referred to in the preceding paragraph, may change from time to time.

This information is being given solely for the general information of Participants and prospective Participants. The precise implications for Participants will depend, among other things, on their particular circumstances and on the classification of the Virtual Financial Assets from a Maltese tax perspective as well their classification in the jurisdiction of the holder thereof, and professional advice in this respect should be sought accordingly.

## 2. GENERAL TAX PRINCIPLES

The Commissioner for Revenue (CfR) has issued three sets of Guidelines in terms of the Income Tax Act, Chapter 123 of the laws of Malta, Value Added Tax Act, Chapter 406 of the laws of Malta and the Duty on Documents and Transfers Act, Chapter 364 of the laws of Malta (the Guidelines) which set out the position on the income tax, VAT and duty treatment of transactions involving the use of distributed ledger technology (DLT). These Guidelines set out that income tax, VAT and duty treatment in relation to any transaction involving DLT assets is regulated by the current provisions of the Acts, taking into account jurisprudence and established principles and that each transaction needs to be analyzed in the same way as any other transaction, i.e. by reference to the nature of the activities, the status of the parties and the specific facts and circumstances of the particular case. The Guidelines clarify that DLT Assets whose utility, value or application is restricted solely to the acquisition of goods or services



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either solely within the DLT platform itself, or in relation to which they are issued or within a limited network DLT platforms, including when they may be transferred on a peer to peer basis, are classified as Utility Tokens as described in, and in terms of, the Guidelines. The VAI Tokens have these characteristics and the information set out below is limited to the income tax, VAT and duty treatment of the acquisition, transfers and redemptions of Utility Tokens as set out in the Guidelines.

Income Tax

Peer to Peer Transfers

To the extent that the Participant is not acting in the course of a trade or business in the transfer of the tokens, profits realized therefrom are not subject to income tax in Malta.

These profits are, however, chargeable to income tax in Malta where the Participant carries on a trade or business in the Tokens and the said trade or business is carried on in and/or from Malta.

## 3. VAT TREATMENT

The VAT treatment of VAI Tokens depends on a further classification in terms of the VAT Act.

The Act defines the term "voucher" as an instrument where there is an obligation to accept it as consideration or part consideration for a supply of goods or services and where the goods or services to be supplied or the identifies of their potential suppliers are either indicated on the instrument itself or in related documentation, including the terms and conditions of use of such instrument. In addition, a "voucher" is classified as "single purpose" where the place of supply of the goods or services to which the voucher relates, and the VAT due on those goods or services, are known at the time of issue of the voucher. Where the voucher is not single-purpose, it is then a multi-purpose voucher.

The VAI Token is therefore a multi-purpose voucher as the place of supply of the services to which the token relates and the VAT due are unknown at the time of issue of the voucher.

Initial Public Offering and Peer to Peer Transfers

For as long as the VAI Tokens are Utility Tokens that are also multi-purpose vouchers, VAT is not chargeable upon the Initial Public Offering and Peer to Peer Transfers.



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Redemption

The redemption of VAI Tokens for services is a chargeable event for VAT purposes. The VAT treatment depends on a number of factors, including, whether the person redeeming the vouchers carries on an economic activity or is a final consumer, whether the said person is resident or established in an EU member State and the place of supply applicable to the particular service which in principle depends on the classification of the service.

## 4. DUTY ON DOCUMENTS AND TRANSFERS

On the basis that the VAI Tokens are classified as Utility Tokens, the initial offering, transfers and redemption for services fall outside the scope of the Duty on Documents and Transfer Act.

Exchange of Information

Malta concluded a reciprocal Model 1A Inter-Governmental Agreement (IGA) for the automatic exchange of financial account information with the United States. It also ratified the multilateral Amended Convention on Mutual Administrative Assistance in Tax Matters (OECD) and adopted the provisions of EU Council Directive 2014/107/EU into national law. Entities that are classified as Reporting Malta Financial Institutions report to the CfR financial account information on persons resident in the US, EU Member States and Third Countries that are Reportable Jurisdictions. The CfR then submits the information to tax authorities of the relevant jurisdictions.

For as long as the VAI Tokens are classified as Utility Tokens, they do not constitute a financial account and accordingly are not reportable in terms of the applicable automatic exchange of financial account information regulations.



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# XII. AML AND CFT POLICY

The management of VAIOT recognizes that the Company is required to comply with the necessary anti-money laundering and counter financing of terrorism (AML and CFT) obligations. As a result, VAIOT established the KYC and AML policy which details the obligations arising from the following laws, regulations and any ancillary documents:

- the Prevention of Money Laundering Act, Chapter 373 of the Laws of Malta (PMLA);
- the Prevention of Money Laundering and Funding of Terrorism Regulation, Subsidiary Legislation 373.01 of the laws of Malta (PMLFTR);
- the Criminal Code, Chapter 9 of the laws of Malta; and
- Part 1 of the Implementing Procedures.

Furthermore, the policy is soon to be updated to include the requirements outlined in Part 2 of the Implementing Procedures applicable for Initial VFA Offerings.

AML and CFT measures shall be applicable to all Participants. Each Participant shall be subject to a customer risk assessment which will take into account various risk factors including customer risk, countries or geographical areas, products, services, transactions and delivery channels. Subsequently, customers shall be subjected to customer diligence (CDD) measures. The purpose of such measures is to identify and verify the identity of the customer and/or ultimate beneficial owners of legal persons and legal arrangements on the following occasions:

- when establishing a business relationship;
- when carrying out occasional transaction;
- when the Company has knowledge or suspicion of proceeds of criminal activity, money laundering or the funding of terrorism; and
- when doubts arise about the veracity or adequacy of the previously obtained customer identification information.



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Customer due diligence measures shall also be applied, at appropriate times, to existing customers on a risk-sensitive basis, including at times when the Company becomes aware that the relevant circumstances surrounding a business relationship have changed.

VAIOT shall adopt simplified due diligence in case of low risk scenarios. Furthermore, the Company shall apply enhanced due diligence in line with the identified risk. The following scenarios shall always warrant enhanced measures:

- customers who have not been physically present for verification purposes;
- customers and/or ultimate beneficial owners who have been entrusted with prominent public function, a family member or a close associate of same;
- activities or services that are determined to be of a high-risk;
- customers and/or ultimate beneficial owners linked to high -risk or non-reputable jurisdictions; and
- any other scenario which shall be deemed as high-risk.

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## STATEMENT

The members of the board of the Issuer hereby confirm that the Whitepaper complies with the law, and more specifically, is in compliance with the requirements under the Virtual Financial Assets Act of Malta, its relevant regulations and the Rules.

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