

# DECODING HUMAN INTELLIGENCE

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*Uniting the world's best and brightest for a breakthrough in  
human-level Artificial Intelligence*



**MINDFIRE**

WHITEPAPER

**“DEEP LEARNING  
HAS BEEN  
OVERHYPED, WE  
HAVE PRETTY  
MUCH NO  
IDEA HOW THE  
BIOLOGICAL  
BRAIN WORKS”**

**ANDREW NG**

Former leader of Baidu's AI Group and co-founder of the  
Google Brain Project



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AT MINDFIRE YOU'LL HAVE THE OPPORTUNITY TO.....



**BE PART OF A WORLD CLASS  
AI COMMUNITY**

A multidisciplinary community of scientists with a focus on Artificial Intelligence (AI), as well as leading private and public stakeholder partners invested in AI.



**GAIN EARLY ACCESS TO  
DEVELOPMENTS IN AI**

New approaches to tackle today's greatest educational, industrial, health and energy challenges through Artificial Intelligence.



**BE PART OF AN INNOVATIVE  
REWARD PROGRAM**

A patented Blockchain system that allows fair and transparent Intellectual Property attribution based on contributions.



**HAVE A STAKE IN AI  
BREAKTHROUGHS**

A system designed to foster breakthrough ideas in AI and rewarded through Mindfire Tokens.



# HUMAN-LEVEL AI THE FINAL FRONTIER

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Since the 1950s, we've been thinking the age of artificial intelligence (AI) becoming an integral part of our day to day lives was just a few years away. We were wrong: human-level AI is still beyond our reach. Although governments and corporations are pouring billions into reaching this final frontier, AI hasn't made significant qualitative progress for decades. Today, people use it as a buzzword to sell products that essentially perform repetitive tasks in a predictable fashion. Most 'so called' AI systems contain no more intelligence than its human programmer.

**Mindfire was created to change this.**

## AI PROGRESS. A GREAT THING FOR HUMANITY

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People often wonder if AI advances could eventually make us obsolete as a workforce, or one day create machines with conflicting goals. The development of human-level AI comes with serious challenges and ethical questions which must be addressed. In line with strong ethical governance, Mindfire's purpose is to ensure AI will enhance the human experience rather than compete against it.

The prospect of creating machines that truly think raises a number of ethical questions. How do we ensure that they don't harm humans or other forms of life? What is the moral or societal status of thinking machines? Could unlocking the brain code lead to intelligent organisms reprogramming themselves with destructive elements?

However stagnated the progression of AI has been, Mindfire's goal is to not only catapult the development of this technology, but also to ensure its inevitable progression is developed by leaders in the field with strong ethical governance throughout the process from a diverse board of stakeholders. Given the misinformation and hype surrounding AI, it is also especially important to create a strong fact-based dialogue with the public as we progress, to help people understand how AI will impact our lives and its implications for our society.

Mindfire will also provide information and educational programs to the general public, largely distributed through academic institutions and high-profile media outlets as we make progress. This will firstly reduce the fears and misconceptions around AI and better facilitate a healthy adoption of AI. Secondly, it positions Mindfire as a thought leader in the field, potentially encouraging more experts and Contributors to join the community.

# THE POTENTIAL OF ARTIFICIAL INTELLIGENCE

Once fully developed, human-level AI will disrupt virtually all economic sectors from healthcare and insurance to financial services, energy and manufacturing. It is estimated that companies invested up to \$39 billion in AI in 2016 alone, while AI's contribution to the global economy is forecast to reach up to \$15.7 trillion by 2030. The economic impact of truly intelligent systems, however, will eventually dwarf these numbers.

**“Artificial Intelligence has the potential to accelerate progress towards a dignified life, in peace and prosperity, for all people,”**

UN Secretary-General António Guterres.

## HOW IT WILL BENEFIT CONTRIBUTORS

Developing human-level AI creates possibilities that will completely transform our world, and the demand for AI Talent has grown exponentially over the last few years. As companies increasingly adopt solutions with components related to AI for their businesses, the need for talent in this field shows no signs of slowing down. Any initiative increasing expertise in AI and systematically educating and training experts is likely to generate significant interest moving forward.

**\$30 billion+**

Approximate global investment in Artificial Intelligence since 2016

**450%**

The increase percentage of jobs requiring AI 2013 - Adobe

**50.1%**

Compound annual global growth rate valuing AI as a \$57.6 billion industry by 2021 - International Data Corporation (IDC)

**\$13 trillion+**

AI's forecasted contribution to the global economy by 2030

**22k**

AI Talents estimated to currently exist worldwide. Mindfire will increase this number significantly

# THE RACE FOR AI IS THE RACE FOR TALENTS

The open and efficient collaboration between the best talents in AI and related disciplines builds the foundation of the Mindfire program. Mindfire brings a fresh approach in research to create a paradigm shift, accelerating our progress in AI to create a breakthrough as quickly as possible.

The number of experts in AI and related fields is rapidly growing every year. However, the demand for AI talent in both academia and industry is growing at an even higher rate. Especially within this competitive environment, most scientific work is conducted in siloed institutions without major incentives to work with other labs or individuals. Mindfire will move away from a siloed approach by engaging a multi-disciplinary global AI community working together openly and trustingly.

Mindfire sets itself apart from other AI research by establishing a network of AI experts outside of current global structures and efforts as well as providing direct incentive for scientists and experts to collaborate. All Mindfire work is grounded on a solid ethical basis and towards a common goal, offering a further motivation for experts to join the Mindfire program and ensure a laser focused approach to developing human level AI resulting in wider societal benefits.

## CRACKING THE 'BRAIN CODE'

### Mindfire's scientific focus

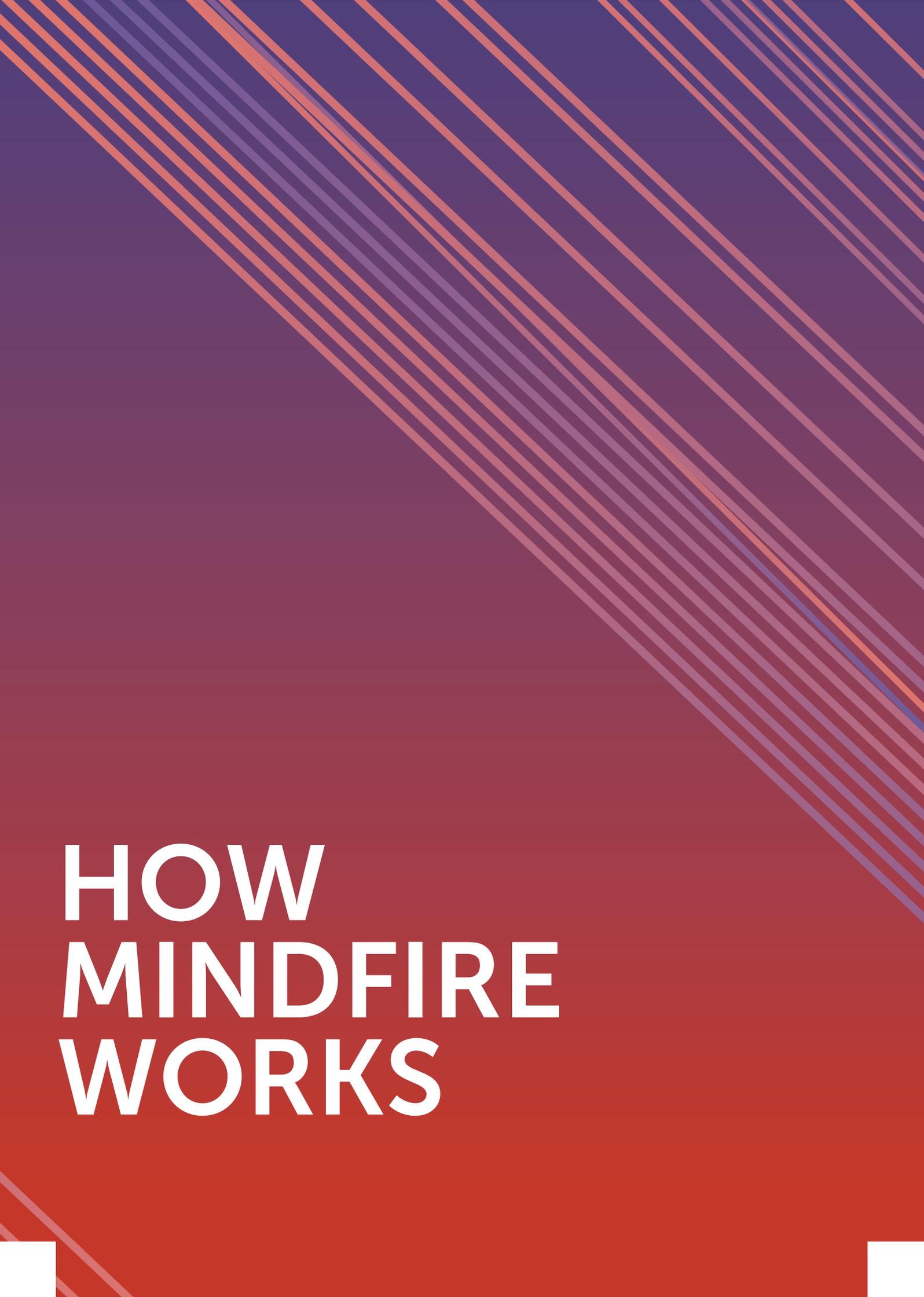
Mindfire's Neuroscience board has gathered evidence that in order to create human-level AI we must fundamentally grasp the complex principles of our own intelligence, which may be hidden in a brain code. Given that the activity of the human brain's neural tissue generates the cognitive world we experience, it is a critical and urgent task to find the relation between the structure and function of the brain, and thereby unlocking the tremendous knowledge in cognitive science and neuroscience for us all to benefit.

Mindfire focuses on cracking the brain code, to answer most notably these three questions:

1. What is the data structure of the brain?
2. What is the generic mechanism (or the principle) by which mental states are generated?
3. What is the generic mechanism (or the principle) by which the structure is transferred from the mental state into memory? Or in more general terms, how is neural tissue and activity to be interpreted in terms of mental processes?

Such guiding questions and scientific principles are embedded into Mindfire programming through our expert scientific community and advisors. Eventually the brain code may look surprisingly simple, not too different from the Laws of Newton that we now use to describe the movement of celestial bodies. Before Newton however, generations of scientists were puzzled by the seemingly vast complexity of the universe and the highly complex interdependencies. From a certain perspective, there is a striking resemblance to how we currently see neural networks. Mindfire is paving the way for extraordinary new approaches and theories.

**By uncovering the brain code, Mindfire intends to eventually build human-level AI instead of increasing computational power, as is prevalent today.**



# HOW MINDFIRE WORKS

# A FRESH APPROACH

## THE LARGEST NETWORK OF AI TALENT EVER ASSEMBLED

Often work is conducted in siloed institutions without sufficient incentives to collaborate with other researchers, labs or universities. Mindfire will be the new epicentre for AI development backed by private sponsors, large corporations, leading universities, associations, cities and communities to create the largest network of talents ever assembled. Our goal is to fully understand human-level intelligence, the 'brain code' and to replicate this in tangible machine prototypes and applications.

## PATENTED BLOCKCHAIN TECHNOLOGY ENSURING FAIR REWARDS AND GLOBAL COLLABORATION

The industry needs a kick start, eventually on the scale similar to the Apollo Moon Landing program, but this responsibility is too great to trust to any single corporation or country. Mindfire is setup as an independent and neutral foundation that cannot be controlled by any country or company, but only by the people who are united by a blockchain based protocol. Incentivizing collaboration of investment and research in any endeavor can be a difficult undertaking due to issues with control of research and the distribution of potential revenues. As an independent entity, Mindfire is building a multidisciplinary ecosystem, of the world's best and brightest, collaborating continuously to find technological breakthroughs that are responsibly controlled with a commitment to sharing gains through commercialization.

## BEYOND COMPUTATION TO CREATIVE THINKING

Most contemporary efforts around AI are focused on computation. The computational power of modern computers is astonishing and in this regard many systems are superior to the speed of the human brain already. Computation, however, is not the same as thinking. There is much more to the human brain than performing arithmetic and we are lacking the concepts on how to bridge the gap. There needs to be a fundamental new approach for machines to start thinking like we do, this is the scientific question that drives Mindfire talents around the globe. By uniting some of the most creative thinkers, Mindfire pursues new roads to AI.

**"To get computers to think like humans, we need a new A.I. paradigm."**

Gary Marcus, former Head AI UBER, The New York Times,

07/2017



# THE MINDFIRE ECOSYSTEM & BENEFIT TO TOKEN HOLDERS

THE PEOPLE. THE FORUMS. THE PLACE. THE COURSES.

The Mindfire ecosystem comprises three main pillars; the Mindfire Missions, the AI Lab and the AI University. These pillars are the three key tools used by the Mindfire Talent Network to create a breakthrough in AI. A key measure of success is the creation of a thriving new global scientific community. This community of Talents, along with the Missions, Lab and University make up our new Mindfire AI ecosystem, where Talents collaborate with academic and corporate partners to eventually achieve human-level AI.



HUMAN LEVEL  
ARTIFICIAL INTELLIGENCE

## THE MINDFIRE TALENT NETWORK

1

MISSIONS



Building the global  
network of Talents

2

AI LAB



Partnering with  
science and industry

3

AI UNIVERSITY



Educating the public  
and business leaders

## MINDFIRE FOUNDATION

Financing, safeguarding and managing Intellectual Property



## MISSIONS

Mindfire will host a series of Missions that unite a diverse range of participants, which we call 'Talents', along with other industry experts to tackle various challenges facing the development of human-level Artificial Intelligence. These programmed events unite the global scientific community, feeding into the Mindfire ecosystem as collaborative workshops. Currently, 10 Missions are planned to take place in Davos, Switzerland over the coming years, one of which has already taken place in May 2018. In between the Missions a core of connected Mindfire talents ceaselessly build upon deliverables and prepare the next Missions

### Collaborate

Mindfire 'Talents' come together in groups of up to 100 per Mission, and will incrementally build on the findings and achievements of previous Missions to eventually unlock human-level AI.

### Acknowledge & Reward

During all Mindfire Missions, audio and video recordings along with text is captured so any tangible deliverable such as computer programs and other scientific assets are certified through our patented Blockchain-based system, to prove ownership and assign credit to contributors.



## AI LAB

A dedicated Mindfire AI Lab will be established in collaboration with leading Universities. It enables researchers and corporates to innovate efficiently and collaborate directly with leading research institutions. Under the supervision of the Mindfire ethics board, the AI Lab also focuses specifically on the application of AI technology in society and business and gathers relevant feedback from these communities to guide scientific research and allocate resources. The AI Lab is built with partners from industry and science which will finance a large portion of the infrastructure.

### Strategize

The AI Lab allows talents to work on ground-breaking projects and cutting-edge AI applications as we move towards the goal of a breakthrough in AI. Novel approaches are drafted by the science board which provides guidelines and principles to tackle.

### Innovate

A place to develop prototypes and build on opportunities identified at the Mindfire Missions. This is where Mindfire regularly brings people together as part of the ongoing drive for innovation across the Talent Network.



## AI UNIVERSITY

To ensure an active dialogue with society about AI, Mindfire will initiate a dedicated AI University that offers courses and lectures by thought leaders to discuss AI's impact on society and the latest developments in the field. Breakthroughs in AI will thrive in collaboration with an informed public and proactive dialogue about its risks and opportunities.

### Engage

Providing access to research and publishing the latest developments from the Mindfire Talent Network.

### Recruit

Finding new Talents and Mindfire champions across the globe by collaborating on unsolved challenges and sharing the best ideas.

### Develop

Nurturing and training University participants to disseminate learning from Mindfire Missions and results attributed to the AI Lab.



# BUILDING THE MINDFIRE TALENT NETWORK

Talent stands at the core of Mindfire. One of the key differentiating factors of Mindfire is how it finds and harnesses carefully selected Talents, who will be guided by leading researchers in scientific fields to move forward as one team.

A talent board ensures an objective and fair selection process in recruiting talents from all around the world. For the first Mission, Mindfire received several hundred applications from across the world. Applicants range from anywhere between 14 and 80 years old. To become part of the talent pool, each Talent was selected based on their potential contribution to unlock the principles that govern human intelligence.

Mindfire is open to all interested candidates, irrespective of academic credentials, background, race, and ethnicity. The goal is to recruit a talent pool eventually comprising several thousand selected AI Talents from which, depending on the current Mission and challenge at hand, the most suitable profiles can be recruited at any time. Participants are required to adhere to a code of conduct in order to be admitted to a Mindfire Mission.

## STEP-1: SOURCING THE RIGHT TALENT

Mindfire reaches the best and brightest scientific talent systematically through 3 main channels: our (1) existing network of leading scientists and advisors, (2) universities at undergraduate and postgraduate level across a range of AI relevant disciplines and (3) specific scientific community outreach.

## STEP-2: SCREENING AND DOMAIN KNOWLEDGE TEST

A resume is submitted first for initial screening to ensure our initial criteria are met. Once through, applicants are asked to submit questions and essays testing their domain knowledge in AI and how they see the future of the field. We test for creativity, logic, style, communication and abstraction skills amongst others.

## STEP-3: DIVERSITY AND COMMUNICATION TEST

Talents are invited for a 1:1 video interview. A set of questions are asked by an AI and a Talent expert. Selection criteria include creative thinking, innovation ability and communication skill within their area of scientific expertise. Subsequently, the talent is either directly admitted to the current Mindfire Mission or is added to the Mindfire talent pool to be considered for future Missions and other projects within the AI Lab and AI University.

**OUR COMMITMENT TO FEMALE STEM TALENT**

In the long-run, Mindfire is committed to working towards 50% of our Talents being female. During Mission 1, Mindfire specifically addressed the topic of gender bias in programming tomorrow's AI through our corporate partners at UBS. Mindfire will work with the relevant partner organisations to ensure that a pipeline of female STEM talent is being built. This is a challenging goal within the tech and scientific arena however Mindfire recognizes that it starts with its own organization principles. Fifty percent of our executive leadership team and operational team is female. We will continue to work with our leading advisors Barbara Bohr, Andra Keya and Joanna Bryson to act as important role models and ambassadors for this vision.



Mindfire is bringing together some of the world's best talent and actively promoting female scientists within the AI ecosystem.



# THE MINDFIRE TOKEN SYSTEM: GENERATING **SHARED REWARDS**

Mindfire is designed around a patent-filed, Blockchain-based Token system to encourage and incentivize competition, collaboration and innovation. Through smart contracts, the Mindfire platform creates a community of innovators who are rewarded when contributions to Mindfire are made.

Every investor will benefit financially through our Mindfire token system, which hold and increase in value across our Missions, AI Lab development and AI University achievements moving forward. Mindfire is already the owner of the first filed patent, "Cryptographic Token-Based System Configured To Manage Proposed Events Actions" as filed in the US.

On the path to reaching a significant breakthrough regarding human-level AI, each of the Mindfire Missions will generate Intellectual Property, which can be monetized fairly in accordance with the ethics board. The market for AI technology and applications is expected to increase exponentially in the coming years, potentially generating outstanding results for everyone involved.



**Decentralized sharing of success**

Rather than building on a traditional business model, Mindfire is based on an incentive model. Talents, Contributors and supporters are rewarded through Mindfire Tokens and thus receive their fair share of the success.

**A patented and fair recognition solution**

Rather than having to protect and claim ownership of new ideas, Mindfire has filed a patent for a Blockchain system that allows fair, open and transparent Intellectual Property attribution of anyone's contribution within a decentralized community.

## WHY DOES MINDFIRE NEED INVESTMENT AT ALL?

Beyond recruiting the best global talent – a sufficient amount of funding is required to achieve the goal of achieving human-level AI. Mindfire seeks to attract Contributors through an Initial Token Offering (ITO), which will enable the funding of Mindfire Missions, with Mindfire Token's underlying value being comprised of our collective Intellectual Property developed over the coming years. Moreover, your investment in the ITO will make you part of a unique global community at the heart of the AI revolution in Davos and across the world. Factoring in the work already done in recent months by hundreds of Talents who are driven by purpose rather than monetary rewards, there's also a list of Talents who have already applied to join the community. We are the best investment opportunity to rapidly progress this industry correctly. But we need the investment to collaborate effectively and have the resources to bring the finest minds in and nurture them in our AI Lab, through Missions and AI University Courses.



# THE MISSION PROGRAM. ALREADY UNDERWAY

A selected number of Talents gather in Davos to participate with each Mission building on the findings of the previous Mission. The city of Davos endorsed Mindfire early on by joining as one of the first partners of the Mindfire program, and hosted Mission 1 in May 2018.

All Missions are structured by key intelligence research topics and every Mission builds on the findings of previous Missions. Missions are structured along research topics, such as cellular automata, artificial organisms, artificial neural networks, robotics, quantum electronics and alternative approaches to AI. Seven stages are conceptualized and dedicated to the creation of human-level AI.

To break open current habits and practices, the disciplinary makeup of Mindfire not only features AI and neuroscience, but also strongly incorporates topics from multidisciplinary fields including cognitive science, systems biology, engineering, robotics or philosophy.

There are currently ten Missions planned. The longer the time horizon, the higher the chances that the scope of Missions will be adapted as our talent network grows and discoveries progress. Each of the seven stages center on unique approaches that constitute one of many possible strategies to create human-level AI. The entire Mission planning approach will be challenged each time a mission is completed, with continuous progress occurring in between each Mission.



1. Davos light projection by Gerry Hofstetter at the first Mission in May 2018



2. Explaining a Drone build with Mindfire talent group

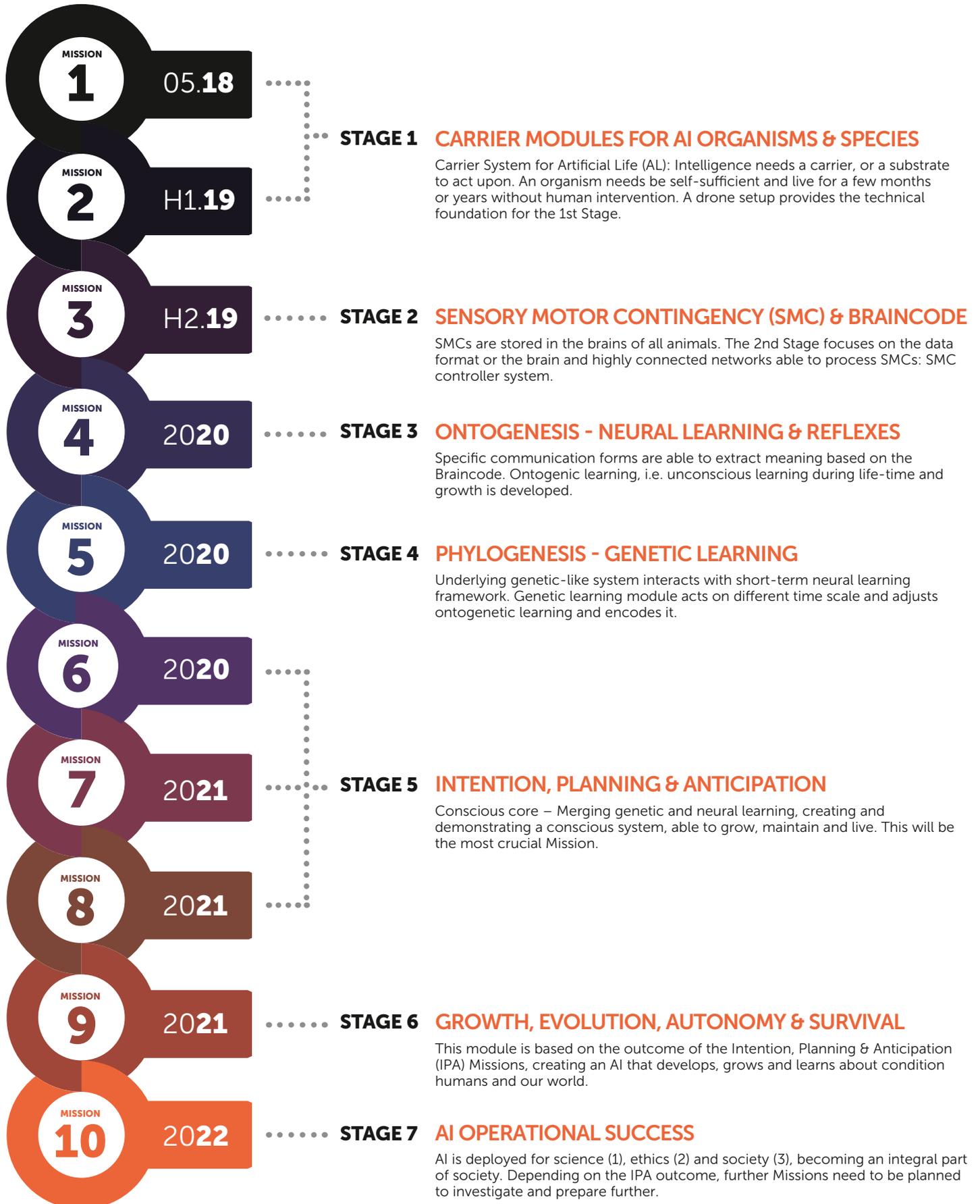


3. Mindfire Talents working on prototyping artificial organisms



4. Alyssa Campo undergraduate in Robotics during a Mission 1 Breakout

# 10 MISSIONS. 7 KEY STAGES.





# MINDFIRE NETWORK TECHNOLOGY

All admitted Talents are asked to join The Mindfire Talent Network powered by StarMind Brain Technology to connect the expertise within the Mindfire community.

The network's self-learning algorithm finds the right expert to answer any question at any time. The Mindfire Network matches questions with real-time solutions from direct human input, maps the expertise within the network and creates a dynamic memory to leverage critical know-how.

The Mindfire Network charts and selects talents autonomously and at a global scale, significantly enlarging the number of involved Talents contributing to Missions or the work in between Missions. This Mindfire Network powered by unique technology has the potential to become the single largest and most diverse global community of contributing and collaborating experts in AI development.



**Mindfire StarMind-based Talent Network collaboration platform**

## THE MILESTONE ROADMAP

- ● ● JULY 2017**      **INCORPORATION OF MINDFIRE**

Pascal Kaufmann, Christoph von der Malsburg und Lukas Sieber register Mindfire in Zug, Switzerland.
- ● ● FEB 2018**      **MINDFIRE GLOBAL NETWORK GOES LIVE**

Mindfire's findings can now be enhanced, further developed or challenged in between Missions through an established open research and ideas network.
- ● ● Q1/Q2 2018**      **WHITE PAPER & CONCEPT VALIDATION**

Regulatory check-ups and technical concept validation in close collaboration with Mindfire's legal and technical partners.
- ● ● MAY 2018**      **SUCCESSFUL COMPLETION OF MISSION-1**

Uniting the top minds in AI across various fields of science in Davos to collectively unlock the principles of human intelligence. Mission-1 focused on i) verifying the program format and direction of Missions 2-5, ii.) build a core group of Mindfire advisors and coaches, iii.) releasing a 365d autonomous drone organism. The outcomes are currently being analyzed, progressed and open issues being prepared for Mission-2 taking place in November 2018 in Davos.
- ● ● JUNE/JULY 2018**      **ORGANIZE FURTHER MINDFIRE MISSIONS AND DEFINE PROJECTS**

Create an internal pipeline and develop a process to manage projects and start of limited number of infrastructure projects with a focus on the Gold Standard for AI. Build the foundations and partnerships for creation of the Mindfire AI Lab and AI University.
- ● ● OCT 2018**      **ALPHA VERSION & TOKEN DISTRIBUTION TO TALENTS OF MISSION-1**

Minting of Mindfire Tokens and distribution to Mindfire Talents. MFT holders will be eligible to vote on the Mindfire platform.

 ... **OCT/DEC 2018**

**DEVELOP NETWORK AND PARTNERSHIPS**

Release of dates of Mission-2, further development of ideas from Mission-1, and appointment of new partners.

 ... **NOV 2018**

**MINDFIRE TOKEN AVAILABLE TO PRIVATE INVESTORS**

In November 2018, the Mindfire Token becomes available to private investors. MFT holders will be eligible to vote on the Mindfire platform.

 ... **H1 2019**

**LAUNCH OF MISSION-2 IN DAVOS, SWITZERLAND**

 ... **H1 2019**

**LAUNCH OF THE MINDFIRE AI UNIVERSITY**

In collaboration with a leading Swiss university and corporate partners, Mindfire will define and oversee initial courses.

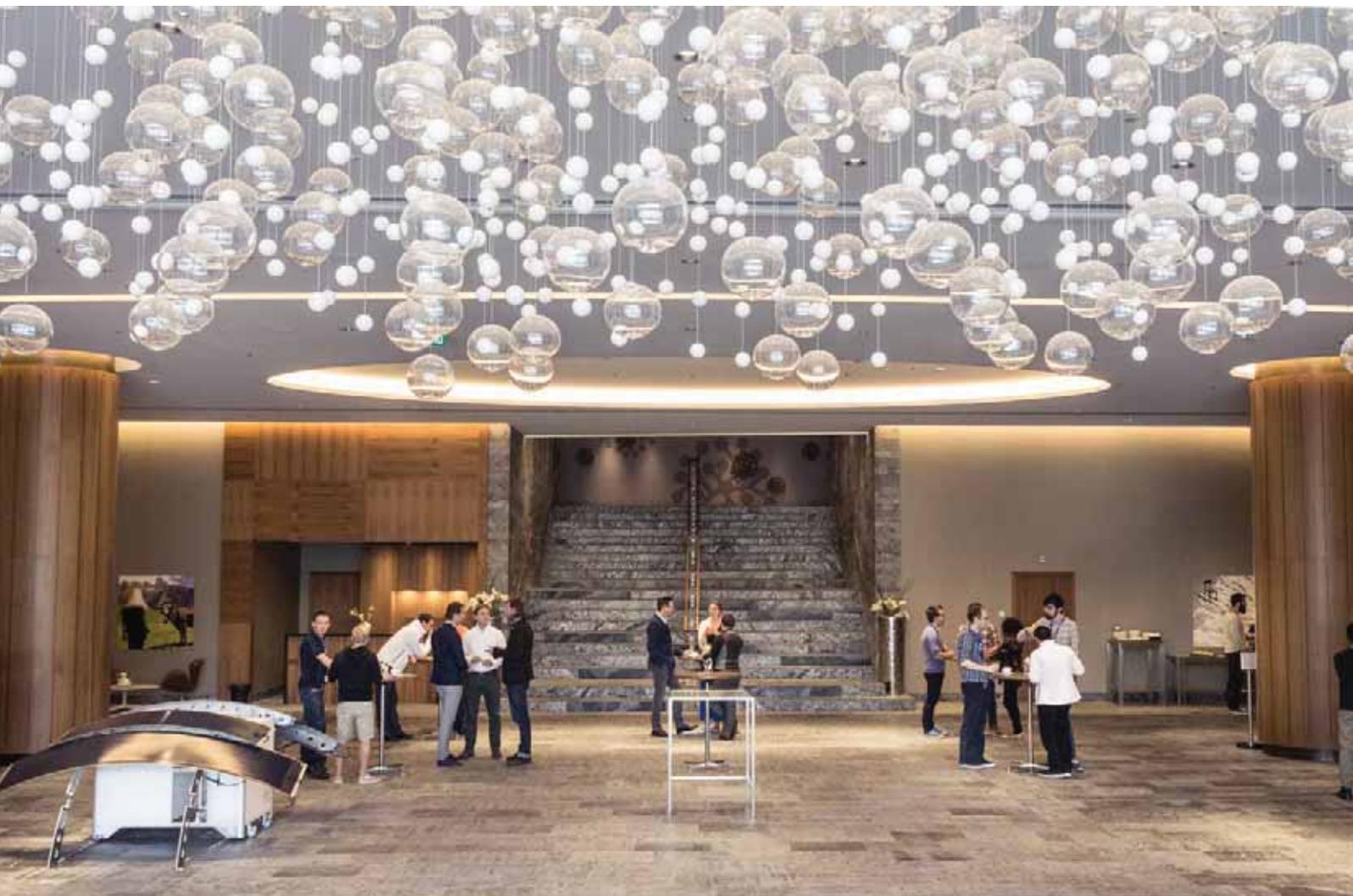
 ... **H2 2019**

**LAUNCH OF THE MINDFIRE AI LAB**

Location sources, acquired and ready to open as a place to interface people from science and industry.

 ... **H2 2019**

**LAUNCH OF MISSION-3 IN DAVOS, SWITZERLAND**





**THE  
MINDFIRE  
LEADERSHIP  
TEAM**



# THE TEAM TAKING US FORWARD

Mindfire has a world-class leadership team and advisory board with a vast pool of AI talents selected from hundreds of contenders. Mindfire was conceived by Swiss entrepreneur and AI pioneer Pascal Kaufmann, who also founded StarMind, a company building human brain powered collaboration networks.

## THE MINDFIRE LEADERSHIP TEAM



**PASCAL KAUFMANN**  
**MINDFIRE FOUNDER & PRESIDENT**

As the neuroscientist, tech-entrepreneur and the visionary behind Mindfire, Kaufmann is determined to unite the best talents worldwide to tackle the mind code. He connected living brains to machines at Northwestern University, IL, USA and built one of the first cyborgs, feeding information directly into brain tissue. He takes a skeptical view on the current state of AI and is convinced that Human-level Artificial Intelligence can and must be created for the people as an answer to the challenges of the 21st century.



**FABIENNE DOERIG**  
**CHIEF FINANCIAL OFFICER**

Fabienne is a finance executive, with extensive experience in strategic transactions, financial planning and controlling and accounting. Her professional experience includes M&A, strategy and business development, transaction advisory, audit and risk management advisory. In the past she held leadership positions at EY and Sonova. She is a Certified Public Accountant.



**LUKAS SIEBER**  
**MINDFIRE FOUNDER & BOARD MEMBER**

Lukas Sieber worked at the Embassy of Switzerland in Washington, D.C., USA and was responsible for all public diplomacy activities and programs for the Swiss government throughout the United States. With a background in political sciences from University of Zurich and postgraduate studies at Georgetown University, USA, he now acts as Executive Director North America of Greater Zurich Area (GZA), the official investment support agency of Zurich and surrounding areas. Additionally, he advises a number of Blockchain-related initiatives and advises US and Swiss/European based businesses.



**CHRISTOPH VON DER MALSBURG**  
**MINDFIRE FOUNDER & BOARD MEMBER**

Prof. Christoph von der Malsburg has devoted his life to the elucidation of the function of the brain. He did research at CERN in Geneva and the Max-Planck-Institute for Neuroscience and he was appointed as professor of computer science and systems biophysics in Los Angeles, USA and Bochum, Germany. He has co-founded two successful companies based on his theory of the visual system and received numerous international awards. Von der Malsburg headed the European Neural Network Society and is one of the fathers of computer vision and self-organizing neural networks.

## THE MINDFIRE LEADERSHIP TEAM CONTINUED...



**CHRISTINE OTT**  
**OPERATIONS & MISSIONS**

Christine is a science and technology enthusiast with a strong interest in Biochemistry, Genetics and Cell Biology. Her areas of expertise include curriculum design, event organization, project management and communications. Christine holds a Master of Science in Biochemistry from the Swiss Federal Institute of Technology (ETH) Zurich.



**NATHANAËL ETTER**  
**TALENT MANAGEMENT**

Nate has a bachelor's degree in economics from the University of St. Gallen (HSG) and spent most of his studies with a student exchange program and a humanitarian project. As one of the main drivers of Business Game St.Gallen, he helps build a platform to help graduates find work.



**EVELINE HUTTEN**  
**TALENT MANAGEMENT SUPPORT**

Eveline has experience in event organization and community building. She loves to engage with people from all over the world and is passionate about the ethical and political implications of AI. Eveline holds a Bachelor of Arts in International Affairs from University of St.Gallen (HSG).

## BLOCKCHAIN ADVISORS



**DR. SEBASTIAN BÜRDEL**

Sebastian Bürgel is the CTO and Co-Founder of Validity Labs. He received his PhD from ETH Zurich before turning his insatiable curiosity and energy to the world of Blockchain and cryptocurrencies. His previous project, SONECT, a Blockchain-based mobile cash withdrawal solution, attracted the interest one of Switzerland's largest financial institutions, PostFinance. A regular speaker at major Blockchain conferences, Bürgel is also one of the world's top smart contract and Solidity developers. His work includes building applications for a wide range of industries such as insurance, real estate, banking and others.



**ANDRE WOLKE**

André Wolke is the CEO & Co-Founder of Validity Labs, Founder of Validity Research as well as Founder of the Blockchain & Internet of Things Association (BIOTS). He has a wealth of experience in bridging industries and bringing together technology providers, researchers, academics and students in a global community of pioneers to build the future of distributed-ledger technology. He is also a top technology influencer, founding member of Chief Digital Community, mentor for the Kickstarter Accelerator program and host of the largest Blockchain meetup in Switzerland.

# GOVERNANCE & THOUGHT LEADERSHIP

An essential element that makes Mindfire stand out from governmental, corporate or academia driven efforts is the core role of the Mindfire ethics advisory board. The task of this board is to advise on how each achievement is commercialized following our ethical and underlying principles of creating human-level AI for wider benefit. Using the latest collaboration technology, the ethics board leverages a global network of experts.

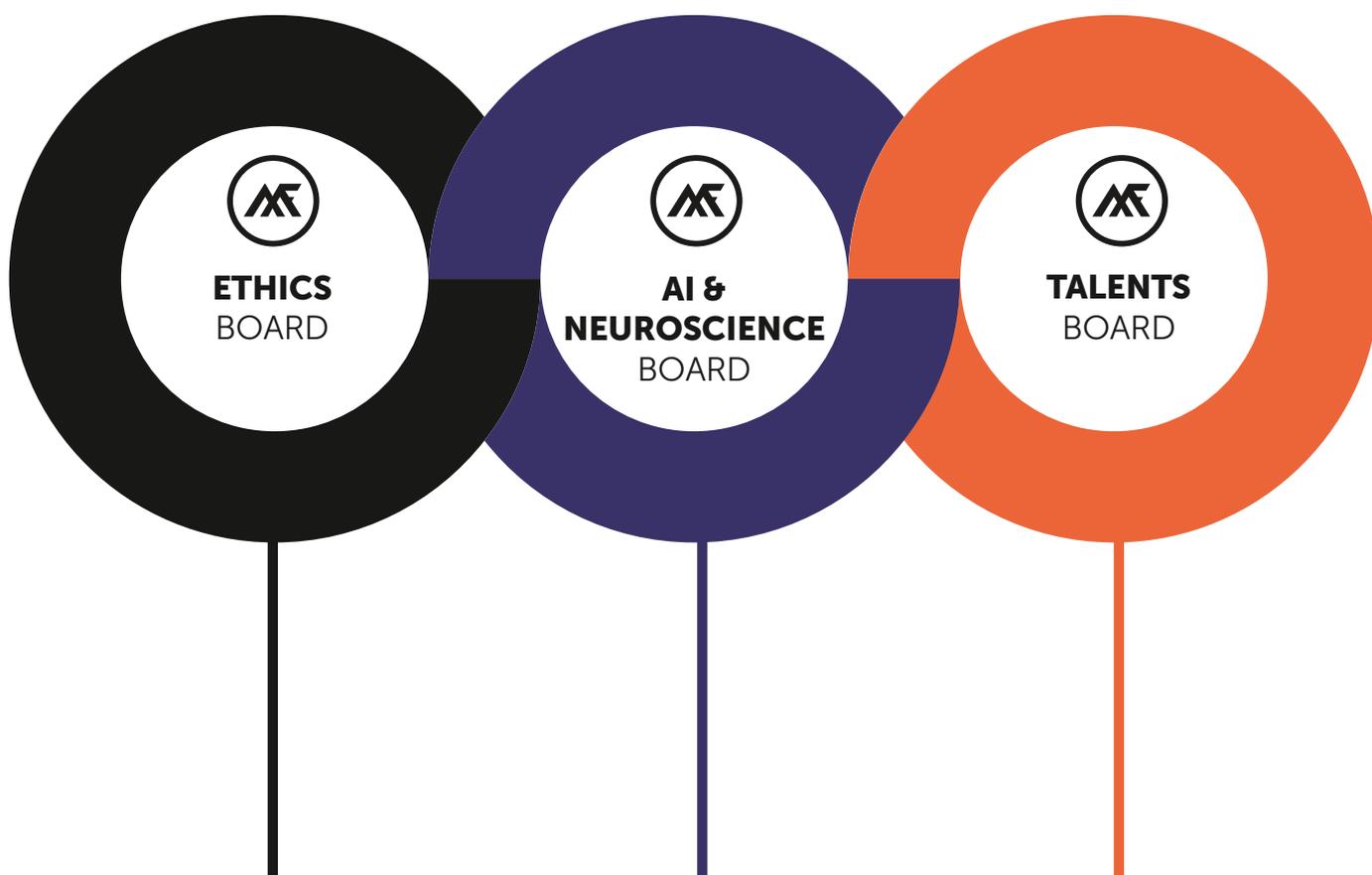
## THE RIGHT APPROACH

Strong ties to the world of academia is essential. Mindfire is about collaboration and shared, sustainable progress versus a gold rush scenario that benefits a select few. Selected thought leaders, AI talent and academic institutions support all ongoing Mindfire efforts in our unique multidisciplinary ecosystem across the globe.

While the aim is not to prevent corporations from owning Intellectual Property or filing patents, Mindfire believes in the overarching control over the essence of what constitutes a human being - and the accompanying responsibility. This is best developed and distributed across a global network of people and institutions.

## THE RIGHT GOVERNANCE

The Mindfire advisory boards are constituted to complement and strengthen the existing board of directors. There is no need for elections, term limits, committee structures or extensive disclosure of their role, remuneration or performance. Advisors focus their energy on providing specialist experience, knowledge and contacts not readily available elsewhere. A set of contracts ensures confidentiality and compliance with the Mindfire rules.





## ETHICS BOARD

## AI & NEUROSCIENCE BOARD

## TALENTS BOARD



**JOANNA J. BRYSON**

**ETHICS BOARD MEMBER**

Prof. Dr. Joanna Bryson has a PhD from the Massachusetts Institute of Technology (MIT), USA, where she worked with Rodney Brooks and other pioneers in the field of AI. Joanna focuses on understanding natural intelligence by using Artificial Intelligence. Her research covers topics ranging from AI, robotics, ethics in AI, and on to human cooperation. She holds a degree in behavioral science from the University of Chicago, an MSc in AI and an MPhil in psychology from Edinburgh, and has undertaken academic positions for Princeton's Center for IT Policy and the Department of Anthropology at Oxford. She regularly appears in national media, talking about human-robot relationships and the ethics of AI.



**ANDRA KEAY**

**AI & NEUROSCIENCE BOARD MEMBER**

Andra Keay is the Managing Director of Silicon Valley Robotics, an industry group supporting innovation and commercialization of robotics technologies and part of the faculty at Singularity University. She is also the founder of Robot Launch's Global Robotics Start-up competition, co-founder of Robot Garden hackerspace, mentor at hardware accelerators, start-up advisor and investor, with a strong interest in commercializing socially positive robotics and AI. Andra co-founded Robohub, the global robotics research news site and co-founded Robot Garden, a robotics makerspace and that teaches Interaction Design and Theory. She holds degrees in Interaction, Communication and Human/Robot Cultural Studies and was selected as an HRI Pioneer in 2010.



**EDY PORTMANN**

**TALENTS BOARD MEMBER**

Prof. Dr. Edy Portmann is Swiss Post Professor of Computer Science at University of Fribourg. His trans-disciplinary research focuses on cognitive computing and its application to cities. Portmann is engaged in intelligently managing today's information overload. For this purpose, he uses a triangulation of methods, applications and tools originating mainly from computer and information science, as well as business and economics and social sciences. He studied information systems, business as well as economics and, later, earned a doctorate in computer science. Edy has also held research posts at the Universities of Singapore, Berkeley and Bern as well as corporate roles at Swisscom and EY.



# HOW THE INVESTMENT WORKS



# CREATING A RETURN ON YOUR INVESTMENT

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In November 2017, the Mindfire Foundation filed the patent for the “Cryptographic Token-Based System Configured To Manage Proposed Events And Actions” in New York, USA (status: patent pending). This invention relates to a Blockchain-based Token system where Contributors are rewarded based on our growth and progress, and once allocated to Talents and Contributors they will represent voting and distribution rights associated with the success of Mindfire.

## PRIVATE TOKEN PLACEMENT FOR CONTRIBUTORS

Contributors will receive Mindfire Tokens during the private placement, whereas Talents will receive Tokens upon completion of Missions. Tokens are intended for Missions 1-10 and will be minted on a one-off basis. Contributors and Talents can conduct smart contract-based transactions with each other or other Token holders who have earned Tokens by participating in, and contributing to the Mindfire Mission program. This forms an economic and scientific ecosystem that rewards the Mindfire community for conducting and sharing their research at Missions, the AI Lab or through AI University programs. It also creates a transparent and trust based peer to peer network.

Beyond the funding provided by Contributors in exchange for Mindfire Tokens during the Private Placement, Mindfire is also open to attracting corporate and non-corporate sponsors. The uniqueness of the Mindfire vision and approach has already gained financial and other means of support of a number of Europe based globally active corporations, business associations as well as Swiss local Government. Sponsors will eventually benefit from the exchange with the Mindfire Talent Network, as well as from the bridge between business and academia that Mindfire will create.

## TRANSPARENT INTELLECTUAL PROPERTY MANAGEMENT

The cryptographic fingerprint of each participant's contributions and discoveries will be stored on the Blockchain allowing fair and direct recognition for new ideas and concepts developed during Mindfire Missions. This is how Talents can earn Tokens without investment, while Contributors can purchase Mindfire Tokens without needing to participate in technological development. Mindfire has named Bernstein Technologies GmbH as a preferred provider to create a digital trail of records of Mindfire's innovation processes using the Blockchain technology.

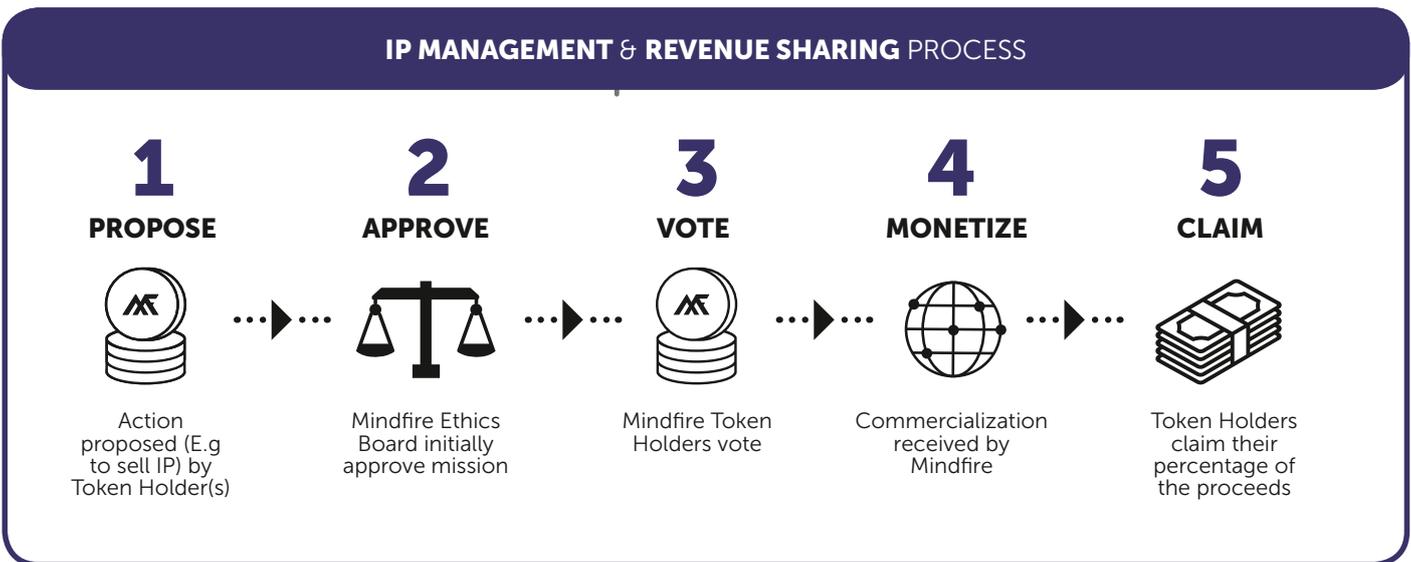
## BUSINESS REVENUE AND COMMERCIAL OPPORTUNITIES

Revenue streams will be created across the 3 major parts of Mindfire; Missions, AI Lab and the AI University to ensure the organization is sustainable and generating strong returns for its token holders. For Missions we will govern corporate engagement effectively to contribute to earned revenue and reward outstanding ideas. The AI Lab will operate on a fee-based business model while the AI University applies a tuition-based business model. Further details will be released in H1/2019 after the first three Mindfire Missions have been completed. As we build the global AI network, additional commercial and revenue opportunities will be assessed and evaluated by our leadership team and ethics board.

## IP MANAGEMENT AND REVENUE SHARING

Progress made across the Mindfire Ecosystem will yield valuable data, analytics, and breakthrough in innovations that will eventually be commercially valuable. Mindfire will systematically identify anything that is patentable or can be licensed in order to ensure and increase licensing revenue from the Intellectual Property. Innovative ideas created at any Mindfire Mission will become part of Mindfire’s Intellectual Property and will be fairly attributed within our network of talents, Contributors and other key stakeholders. This includes any advances in existing technologies by the incorporation of interdisciplinary findings as well as major breakthroughs towards human-level AI. Mindfire can license Intellectual Property in parts or whole or give usage rights (exclusive or not). The respective proceeds are subsequently distributed amongst Token Holders, with the amount received by any party being directly proportional to the number of Mindfire Tokens held.

While the portfolio of Intellectual Property held by Mindfire will grow over time, Mindfire Token holders will share the revenues arising from commercialization of the Intellectual Property as it occurs. Tokens are subject to the Token Sale Terms and Conditions that form a valid contract. Therein the Foundation is bound to commercialize Intellectual Property and to distribute 80% of the revenue to the Tokens holders. Mindfire retains 20% of any arising revenue allowing the company to sustain itself.



## HOW YOUR INVESTMENT WILL BE SPENT

Item or Activity in [USD]	2018	2019	2020	2021
<b>Missions</b>	1,800,000	6,500,000	9,100,000	8,000,000
<b>AI Lab</b>	350,000	200,000	200,000	300,000
<b>AI University *</b>	50,000	300,000	400,000	500,000
<b>Talent Acquisition</b>	800,000	440,000	300,000	300,000
<b>Operations</b>	1,000,000	1,200,000	1,300,000	1,400,000
<b>Administration</b>	700,000	500,000	500,000	500,000
<b>Total</b>	4,700,000	9,140,000	11,800,000	11,000,000

\* The AI University will be co-financed by Mindfire private partners and University partners.

Above listed are the cornerstones of the detailed budget (available upon request). Factoring in a 15% planning buffer, the overall target budget amounts to USD: 40.0 mio.

# HOW BLOCKCHAIN & 'SMART CONTRACTS' WORK

Talents can conduct smart contract-based transactions with other Mindfire Token holders such as Contributors, service providers and other talents using the Mindfire Tokens, which they earn by joining, participating in, and contributing to the Mindfire Missions. MFT transactions are recorded on the Blockchain, assuring integrity and flexibility, and enabling management and verification tools to achieve shared goals efficiently.

## POWERED BY BLOCKCHAIN & MINDFIRE DAO

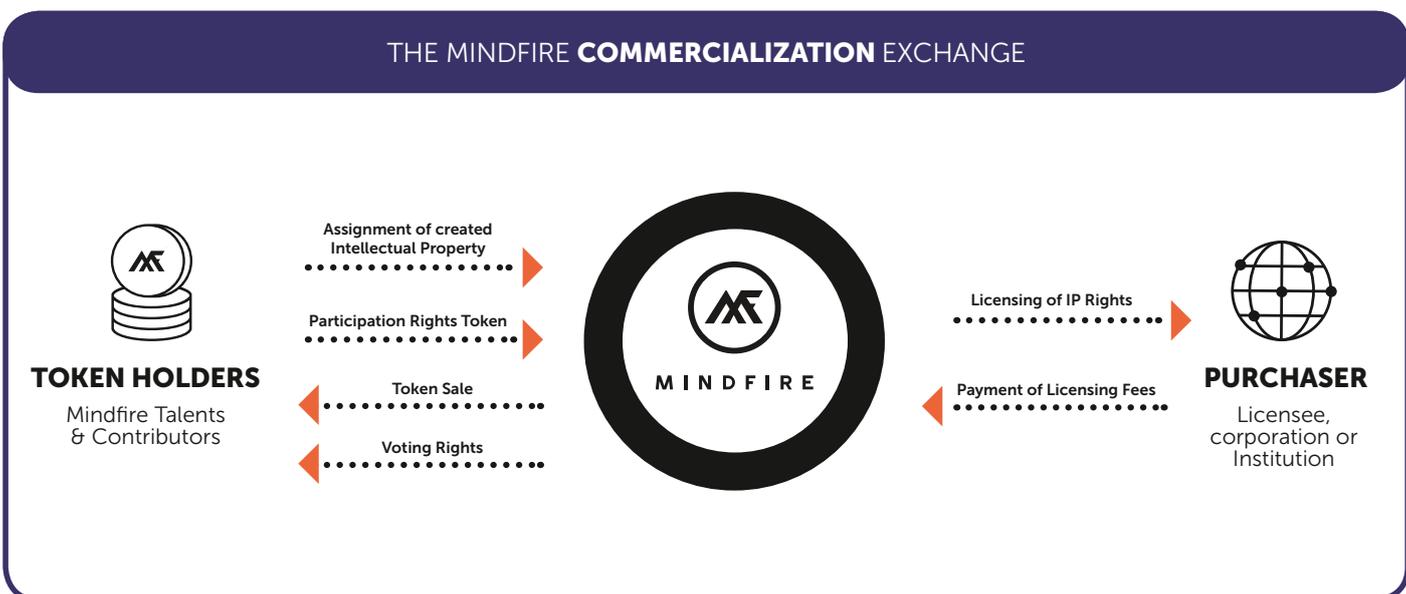
Mindfire is a program and structure, implemented in smart contracts to create a Decentralized Autonomous Organization (DAO). It requires no special innovation in cryptocurrency or Blockchain technology, making the implementation of the Blockchain solution straightforward.

The system is programmatically implemented by computer code to control actions with respect to a set of Intellectual Property assets. The role of Mindfire will be defined based on one or more Blockchain-based smart contracts. Each smart contract includes computer code to implement rules that control generation and allocation of the cryptographic Tokens, and manages proposed events or proposed action related to assets, the Tokens and/or Mindfire Tokens or Mindfire as an organization.

According to one feature of the invention, in response to receipt of proposal information defining a valid proposal, the system is configured to authorize a vote of the Token entitled persons (Talents and Contributors, also referred to as "Token holders"), whether to implement the proposal and actions associated with it. To what extent the patent will be licensed to other research institutions, corporations or organizations and under what conditions, will be decided by the Token holders.

## MINDFIRE INITIAL TOKEN OFFERING & PROCESS

Talents and Contributors are shown in the diagram here as the primary Token holders (bottom left), each contributing either know-how, Intellectual Property or cash through Token sales. Mindfire will commercialize the accrued Intellectual Property based on voting of the Mindfire Token holders. The exchange between Intellectual Property licensing rights and payments towards the commercialization is shown below:





# TOKEN SALE & DISTRIBUTION

## TOKEN GENERATION & SALE

Mindfire Tokens (MFT) are ERC20 Tokens based on the 'Ethereum Blockchain'. 40% of all MFT will be available during the one-time Token sale (incl. pre-sale).

### Overview

Token Name	Mindfire Token
Token Symbol	MFT
Total MFT Amount	1,600,000,000
Available during ITO	640,000,000
Unsold Tokens During Token Sale	Unsold Tokens will be burned
Payment of Dividends	Via separate revenue distribution smart contract (in ETH or stable Tokens)

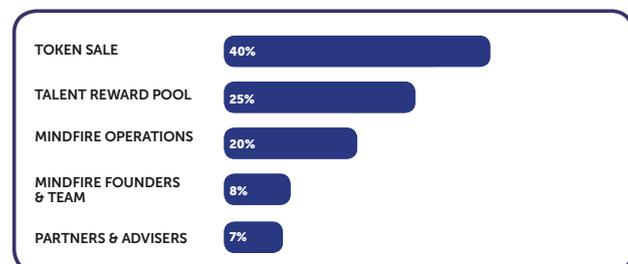
### Token Sale

Exchange Rates	Private Sale: fixed
Token Sale: open	MFT
Accepted Payment	BTC, ETH, FIAT
Token Placement Period	November 2018 - June 2019
Minimum Goal	50,000,000

## TOKEN DISTRIBUTION

Initial Mindfire Tokens will be offered in exchange for Bitcoin, Ether or fiat payments. The reward pool is calculated on 100 talents per mission. The allocation of the Mindfire Tokens is illustrated below:

### Distribution breakdown



40% of the total amount of Mindfire Tokens created will be available during the private, pre-sale and the main sale periods. 25% of the Tokens will be assigned to an internal Talent Fund, in order to create a reward pool for the Mindfire talents and contributors. (Note the talent reward calculation is based on a talent pool of 100 for each mission and pro-rated accordingly). 18.5% of the Tokens will be assigned to Mindfire for future financing of Missions and operations. 8% of the Tokens will be rewarded to the founders and the team. 7% of the Tokens will go to our partners and advisers, including legal, marketing and technical supporters, to compensate them for their efforts.

## TALENT TOKEN DISTRIBUTION

Different talent Token distributions are feasible and we will start off with an equal distribution. Initially, all researchers attending an event receive the same amount of Tokens. For each Mission, 1.5% of all Mindfire Tokens are distributed among Mission participants, so that 10 Missions can be fully financed, including a buffer for further Missions or larger Missions.

In addition, Mindfire may choose to run a different Token allocation mechanism at its sole discretion. However, the same mechanism of Token allocation applies to contributions through the Mindfire Talent Network in between Missions. The Mindfire Starmind-based platform will incentivize positive contributions to Mindfire by awarding Tokens through a voting mechanism by Token holders.

# HOW COLLECTIVE DECISIONS ARE MADE

## OPERATIONAL PROPOSALS

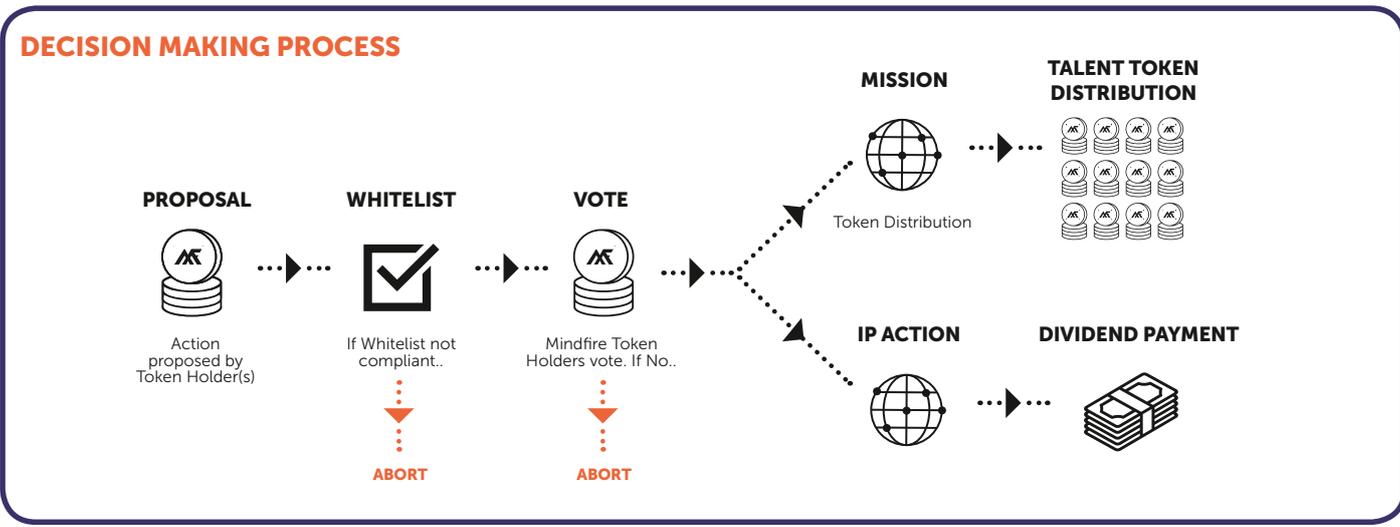
Any Mindfire Token holder or group of Mindfire Token holders with at least 1% of the total number of Mindfire Tokens can make a proposal. In order to show some "skin in the game" they have to submit at least 0.01% of their Tokens to Mindfire. This 0.01% charge will automatically be distributed by the smart contract system to Talents (upon completion of the Talent voting phase) if the proposal is accepted. If the proposal is rejected, the Mindfire Tokens will be 'burned' and deemed unusable, however this will be offset by an increase in the value of all remaining Mindfire Token holdings due to a reduction in the overall supply.

## WHITELISTING

A valid proposal must be in line with the Mindfire Foundations' by-laws. This will be enforced through a vote by the Ethics Board of the Foundation. A freshly submitted proposal is "pending" until the board of the Mindfire Foundation has casted a vote. The proposal can then be in a "whitelisted" or "rejected" state. Also rejected proposals will be visible on the Blockchain in order to provide transparency over the actions of the ethics board.

## VOTING

All Token holders can cast a binary vote on whitelisted proposals (yes/no). The number of votes that a Mindfire Token holder can give is proportional to their respective Mindfire Token balance. Proposals can be voted on for a duration to be determined by the community. The faith of the proposal is governed by a simple majority rule: A proposal is approved if more than or equal to half of all casted votes are in its favor, otherwise it is rejected.



## INTELLECTUAL PROPERTY ACTION

Another form of proposal that undergoes the same whitelist and voting process is the governance of Intellectual Property. For example, a proposal to sell parts of, or the entire Intellectual Property of some specific project or manage Intellectual Property otherwise (e.g. give exclusive usage rights, settle IP dispute, etc.).

A proposal comprises:

- Link to proposal (e.g. URL to PDF of proposal document)
- Mindfire Token allocation (both could also be zero):
  - For sponsors: directly allocated as soon as a proposal is approved
  - For talents: at the end of the voting period

# IMPORTANT DISCLAIMER

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This Initial Token Offering (ITO) White Paper is provided by Mindfire for informational purposes only. Nothing in this White Paper shall be construed as an offer to sell or buy securities in any jurisdiction, or a solicitation for investment, or an investment advice. The White Paper does not regulate any sale and purchase of Mindfire Tokens (as referred to in the White Paper). The purchase of Mindfire Tokens is subject to the Token Sale Terms and Conditions.

This White Paper describes the current vision of Mindfire. While we intend to attempt to realize this vision, please recognize that it is dependent on quite a number of factors and subject to quite a number of risks. It is entirely possible that the realization of the vision of Mindfire will be impossible, or that only a portion thereof will be realized. We do not guarantee or warrant any of the statements in this White Paper, because they are based on our current beliefs, expectations and assumptions, about which there can be no assurance due to various anticipated and unanticipated events that may occur. Blockchain, cryptocurrencies and other aspects of the technology used by Mindfire is in its infancy and will be subject to many challenges, competition and a changing environment. We will try to update our community as things grow and change, but undertake no obligation to do so. The Mindfire Mission is a very ambitious undertaking that may never succeed.

Due to the retrospective nature of regulatory action or guidance, we can make no guarantees regarding the legality of the Mindfire Token and the Mindfire Token launch in any given jurisdiction. Mindfire Tokens may not be available in certain countries. Mindfire Tokens are participation rights Tokens associated with certain voting rights. Mindfire Tokens are non-refundable and are not for speculative investment. No promises of future performance or value are or will be made with respect to Mindfire Tokens, including no promise of inherent value, no promise of continuing payments, and no guarantee that Mindfire Tokens will hold any particular value. Mindfire Tokens hold no rights in the Mindfire organization.

This White Paper may be updated or altered, with the latest version of the White Paper prevailing over previous versions and we are not obliged to give you any notice of the fact or content of any changes. The latest version of the White Paper in English is available at the website <https://mindfire.global>. While we make every effort to ensure that all data submitted in the White Paper is accurate and up to date at the point in time that the relevant version has been disseminated, the proposed White Paper is no alternative to consulting an independent 3rd party opinion.

The White Paper does not constitute an agreement that binds Mindfire and the directors, officers, employees and associates do not warrant or assume any legal liability arising out of or related to the accuracy, reliability, or completeness of any material contained in the White Paper. To the fullest extent permitted by any applicable law in any jurisdiction, Mindfire disclaim all liability to you and everyone else in respect of the content of this White Paper, whether under any theory of tort, contract or otherwise and whether in respect of direct, indirect, consequential, special, punitive or similar damages. Persons who intend to purchase Mindfire Tokens, should seek the advice of independent experts before committing to any action, set out in the White Paper.

**“CURRENT  
MODELS OF  
INTELLIGENCE  
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EXTREMELY FAR  
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HUMAN  
INTELLIGENCE”**

**DOUGLAS R. HOFSTADTER**

Prof. MIT, Stanford in cognitive science, winner of the  
Pulitzer Prize