



SPACE DECENTRAL

Connecting engineers, scientists, and future astronauts to devise and fund next-generation space initiatives.

info@spacedecentral.net



Space programs are not aligned with our drive to explore

Removed from public participation

National space programs have been removed from public guidance and input, in addition to being insulated from any private third-party evaluation

- Limited number of astro jobs, & no path to take strategic action with volunteer work
- Post-collegiate dreams regularly crushed – settling for weaponry instead of spaceships
- Export control regulations result in restrictive hiring policies which impede innovation

Politicians control funding

At the same time, these program's funding are mostly determined at the whims of politicians, where changes in administration cause setbacks

- NASA, the world's largest program, has 2018 budget of \$21 billion – compared to a US defense budget of \$700 billion
- Percentage of federal budget allocated to NASA has greatly decreased since 1966
- 2018 European Space Agency budget is \$6 billion, yet Europe has over 2x population



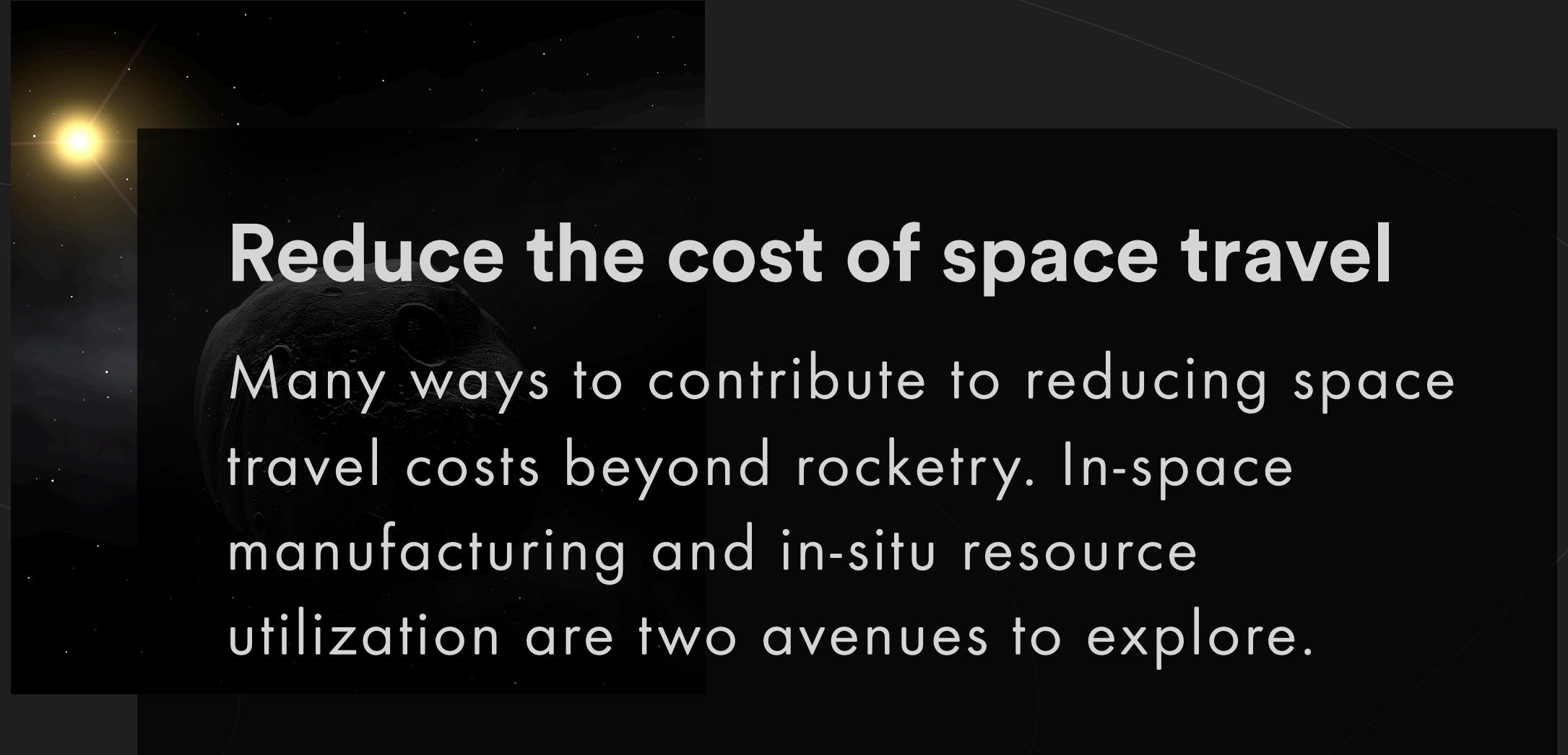
**Space is too important to
be left to Big Government &
Big Business**

The Case for an International Space Agency



Increase our knowledge base

Expanding our understanding of the universe and whether life exists beyond Earth will have a tremendous impact on the human psyche, race relations, and religion.



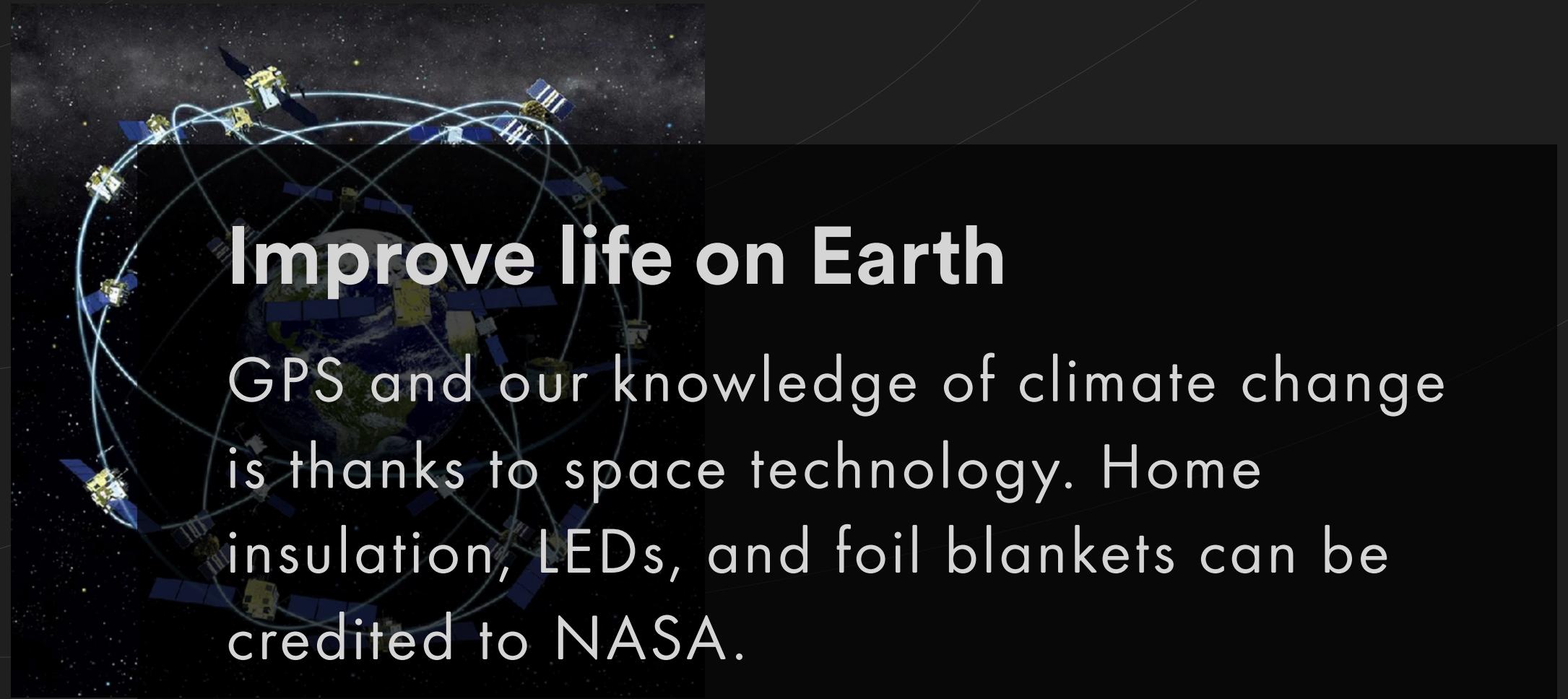
Reduce the cost of space travel

Many ways to contribute to reducing space travel costs beyond rocketry. In-space manufacturing and in-situ resource utilization are two avenues to explore.



Mitigate existential risks

A large asteroid may collide with Earth & wipe us out. Climate collapse. World War III. It's not logical to put all of our eggs in one planet.



Improve life on Earth

GPS and our knowledge of climate change is thanks to space technology. Home insulation, LEDs, and foil blankets can be credited to NASA.



Space Decentral is a decentralized space agency aiming to reinvigorate the push for space exploration, with global citizens in control

Autonomous

Member control over how work is directed, how decisions are made, which projects are funded

Curiosity

Decentralized

No single corporation or nation determines the direction

Purpose

Expansion

Citizen-led

Space Agency

Strategically developing plans for exploration, discovery, and the survival of our species

**BofAML projects
the space industry
will grow 771% to
\$2.7 trillion by
2030**

Current market size
~\$350 billion

*We have to democratize
access to this future wealth*

Why now?

Inventors and entrepreneurs can bring to life advanced space missions with drastically reduced budgets – and these missions can flourish into new ventures

Launch costs will continue to decrease as reusable rockets come to market

Falcon Heavy (\$90m) vs.
NASA's SLS (\$1b)

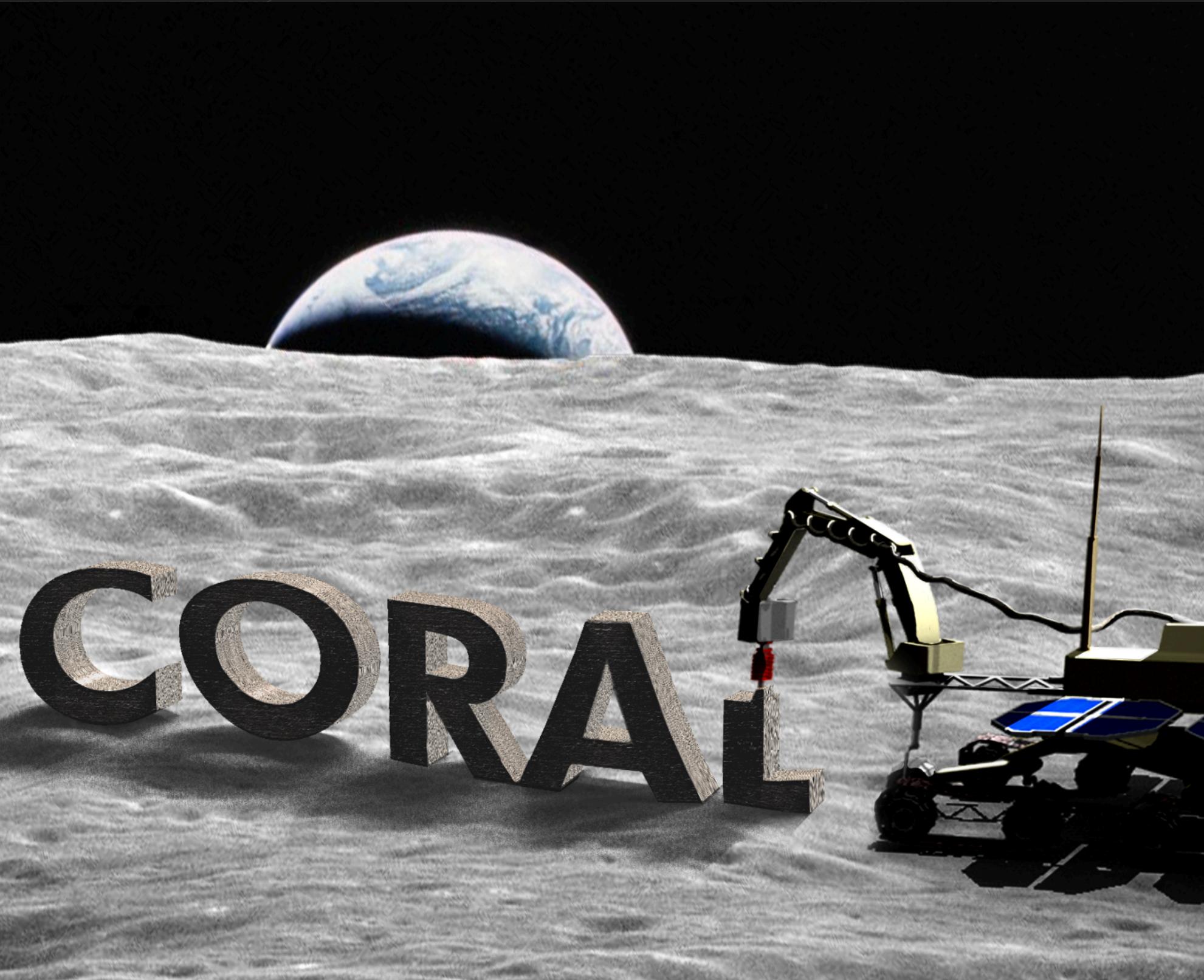
We may all soon have personal satellites

A rocket launching into space, leaving a bright orange and yellow trail of fire and smoke against a dark background filled with stars.

**We have been openly working on
a lunar mission for four months,
with a team that has over a
century of aerospace experience**

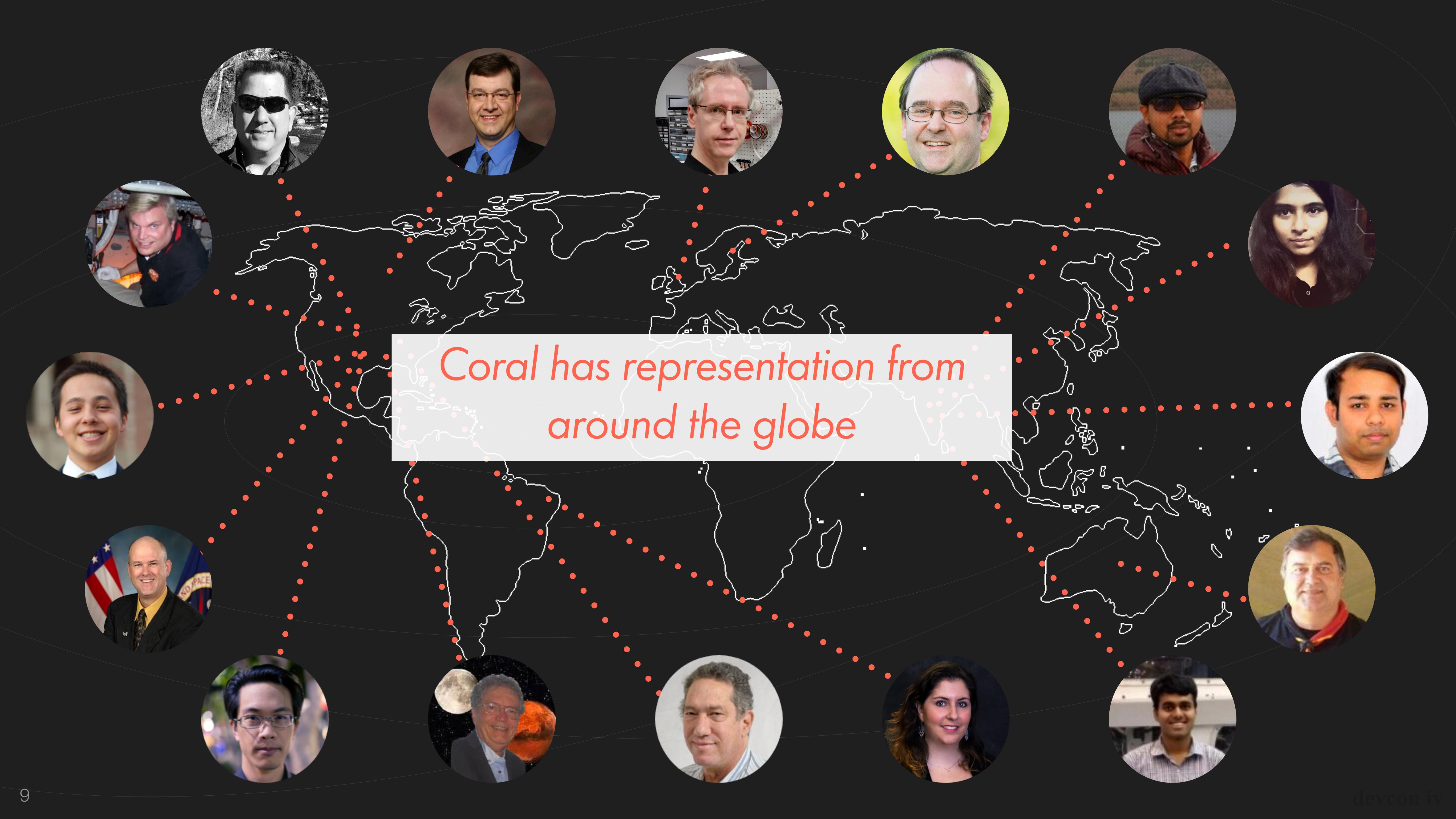
Coral: An Open Lunar Space Program

Space Decentral's Pilot Program



- Objective: demonstrate in-situ resource utilization (ISRU) and 3D printing technologies on the Moon's surface using lunar regolith as feedstock
- DAO vote and funding needed to fully develop the mission
- Over 15 community members currently volunteering, four former NASA engineers

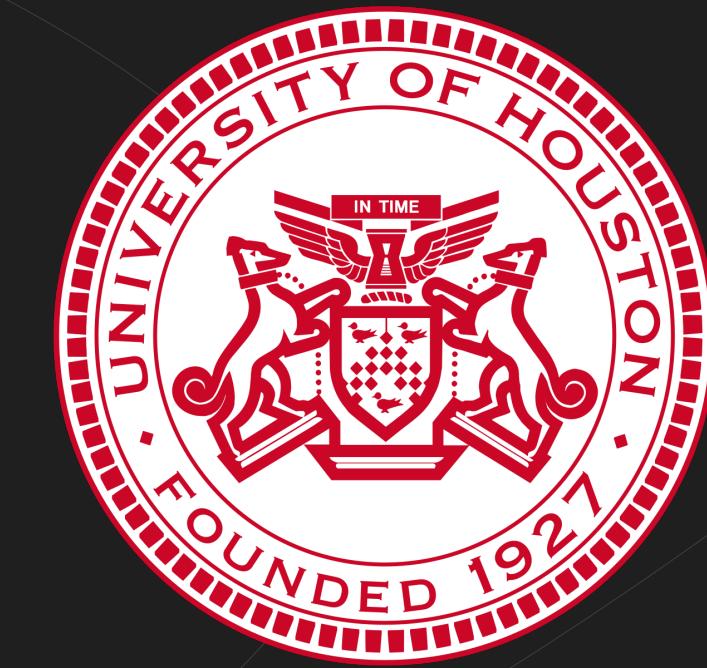
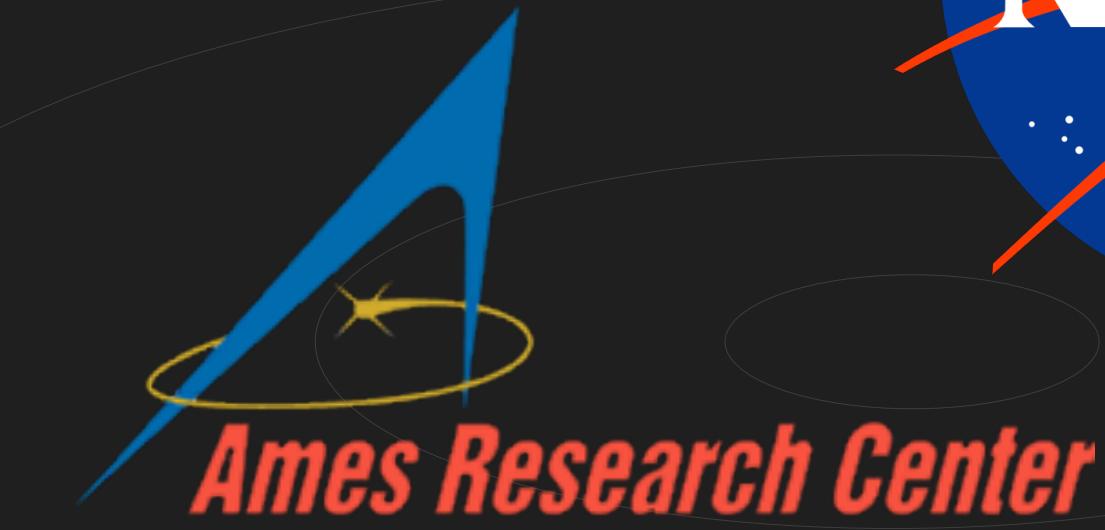
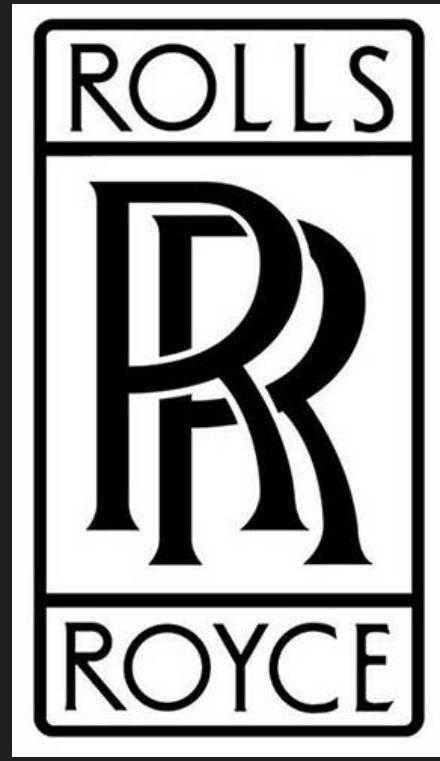
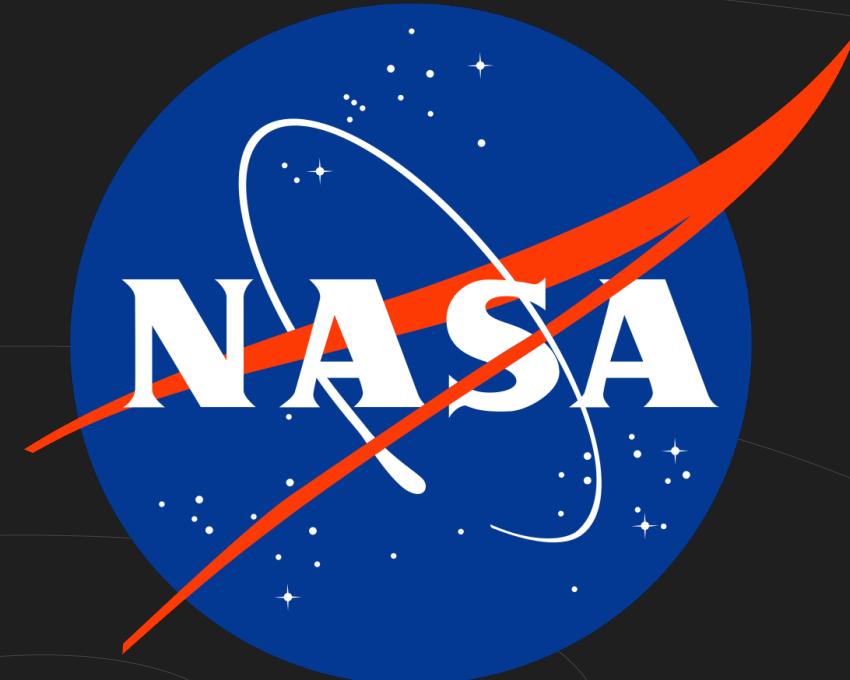
3D printing with moon dust (regolith) will reduce the cost of space travel (less mass to orbit!)



*Coral has representation from
around the globe*

Coral is currently a volunteer-driven project

Our community members have other day jobs, are students, or are retired



Combined, the team has over a century of aerospace experience

There are no partnerships with the organizations represented in the logos. This slide illustrates the past and present organizations affiliated with current community members.



**By operating as a decentralized
autonomous organization (DAO), space
becomes open to public participation &
unchained from the nation-state**

Two Token Ecosystem



Faster Than Light

- Transferable token, can be purchased
- Stake for governance rights and investment privileges
- Used to prioritize programs

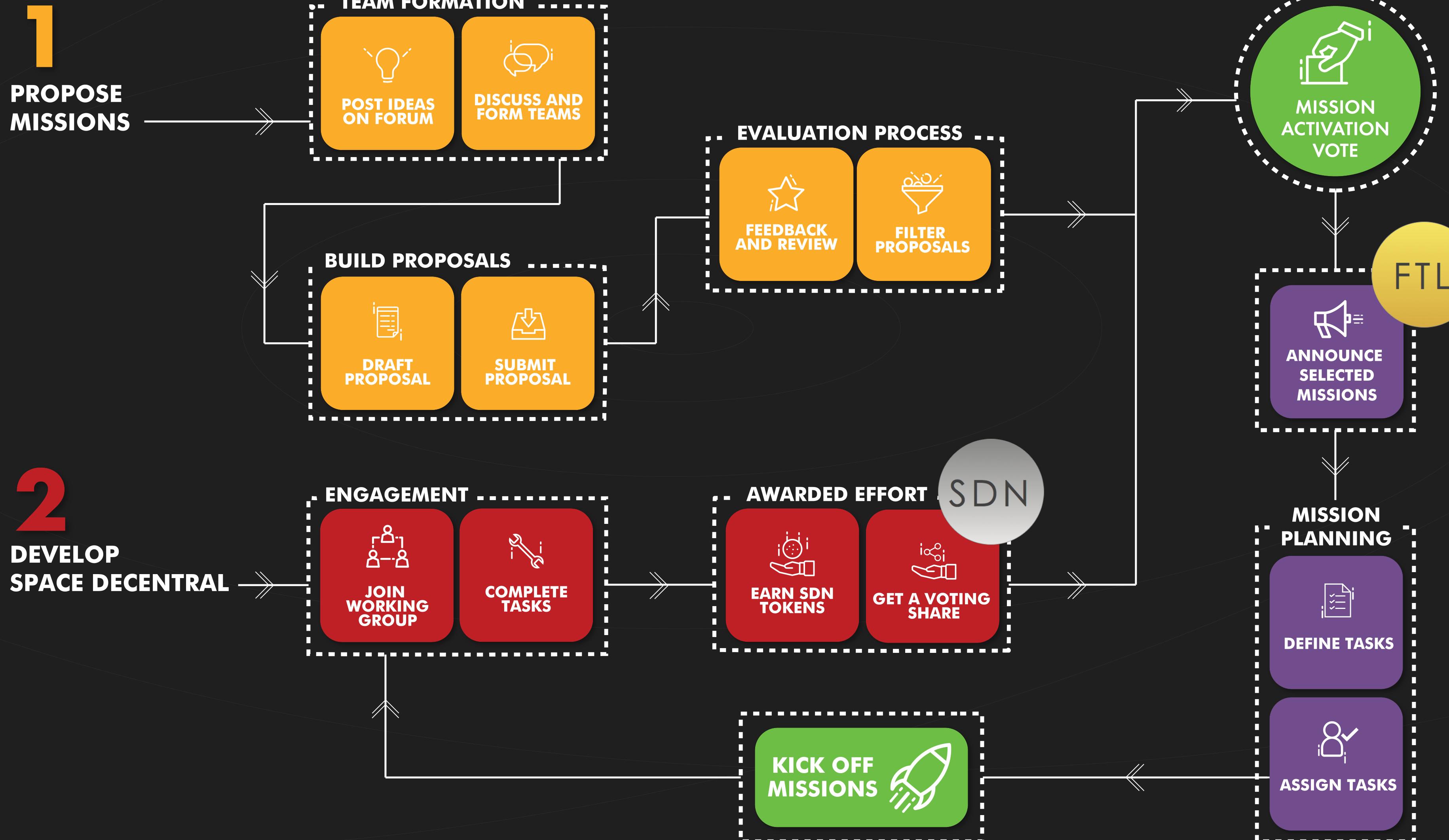


Space Decentral Network

- Nontransferable, never sold
- Merit-based token, awarded to intellectual contributors
- FTL rewards distributed in proportion to SDN earnings

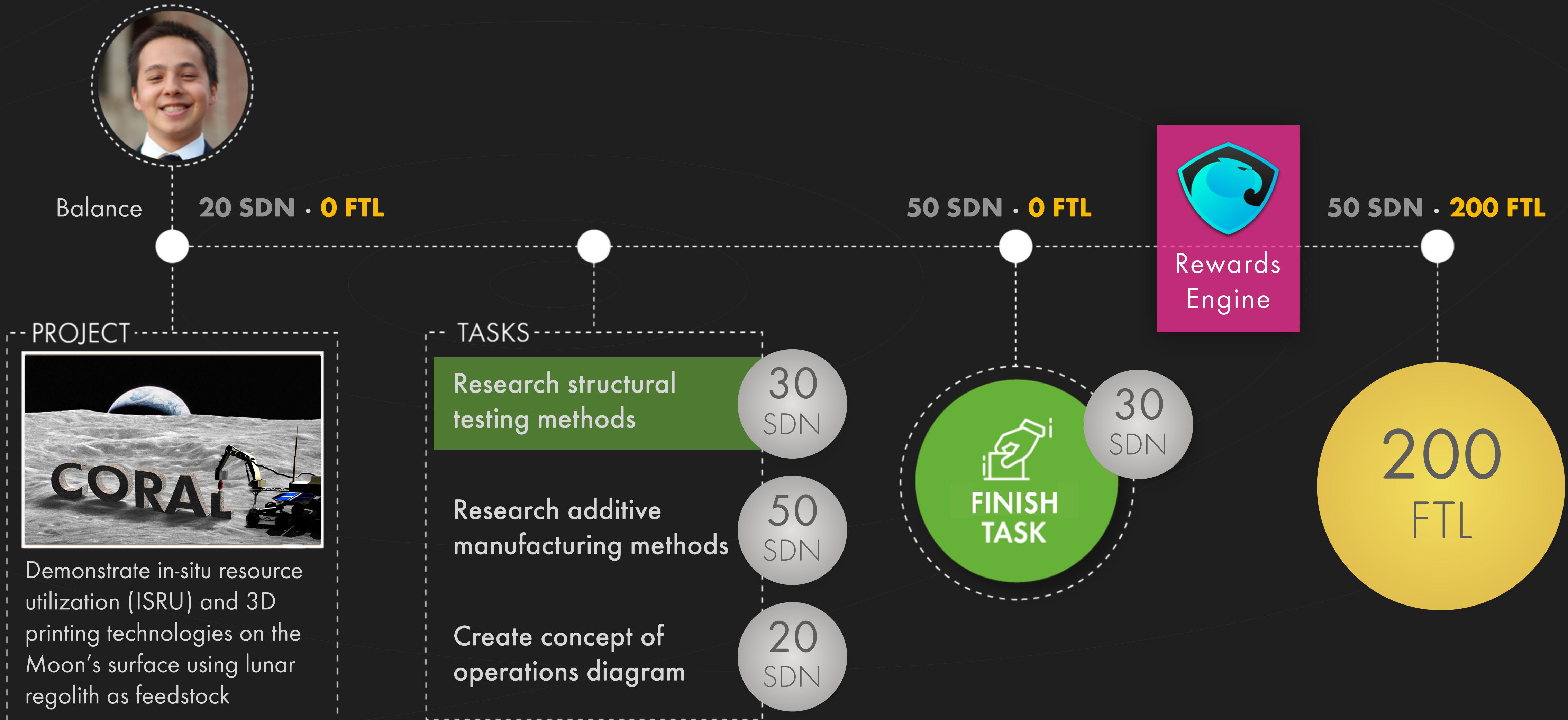
The Space Mission Activation Process (SMAP)

The curation method to vet projects on the Space Decentral Network



Activated proposals receive FTL grants and become open for public participation

FTL is distributed using a rewards engine, based on the amount of SDN earned by knowledge contributors



Combining successful concepts from popular platforms to invent the premier space collaboration network

When you combine....

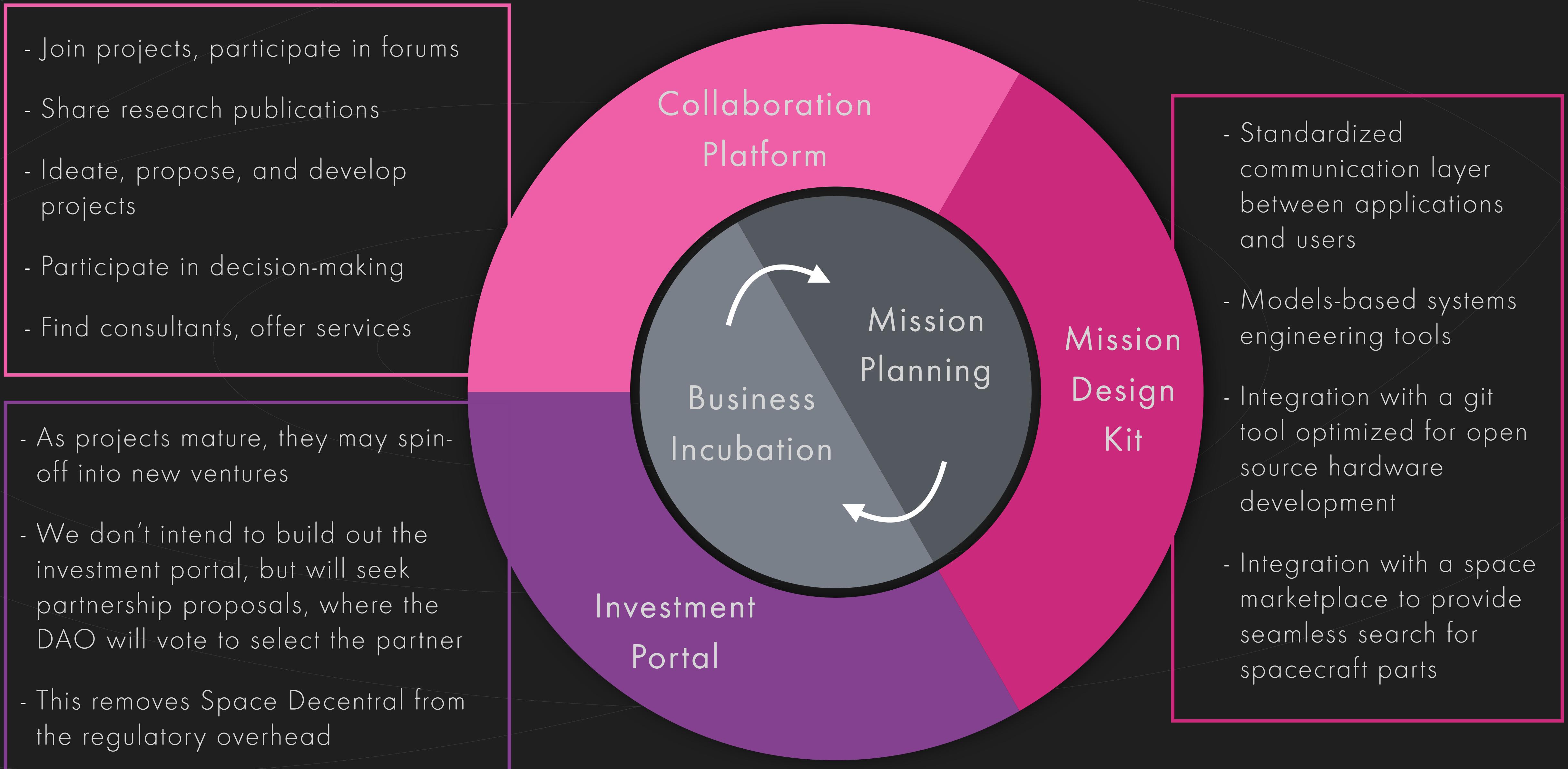


you get...

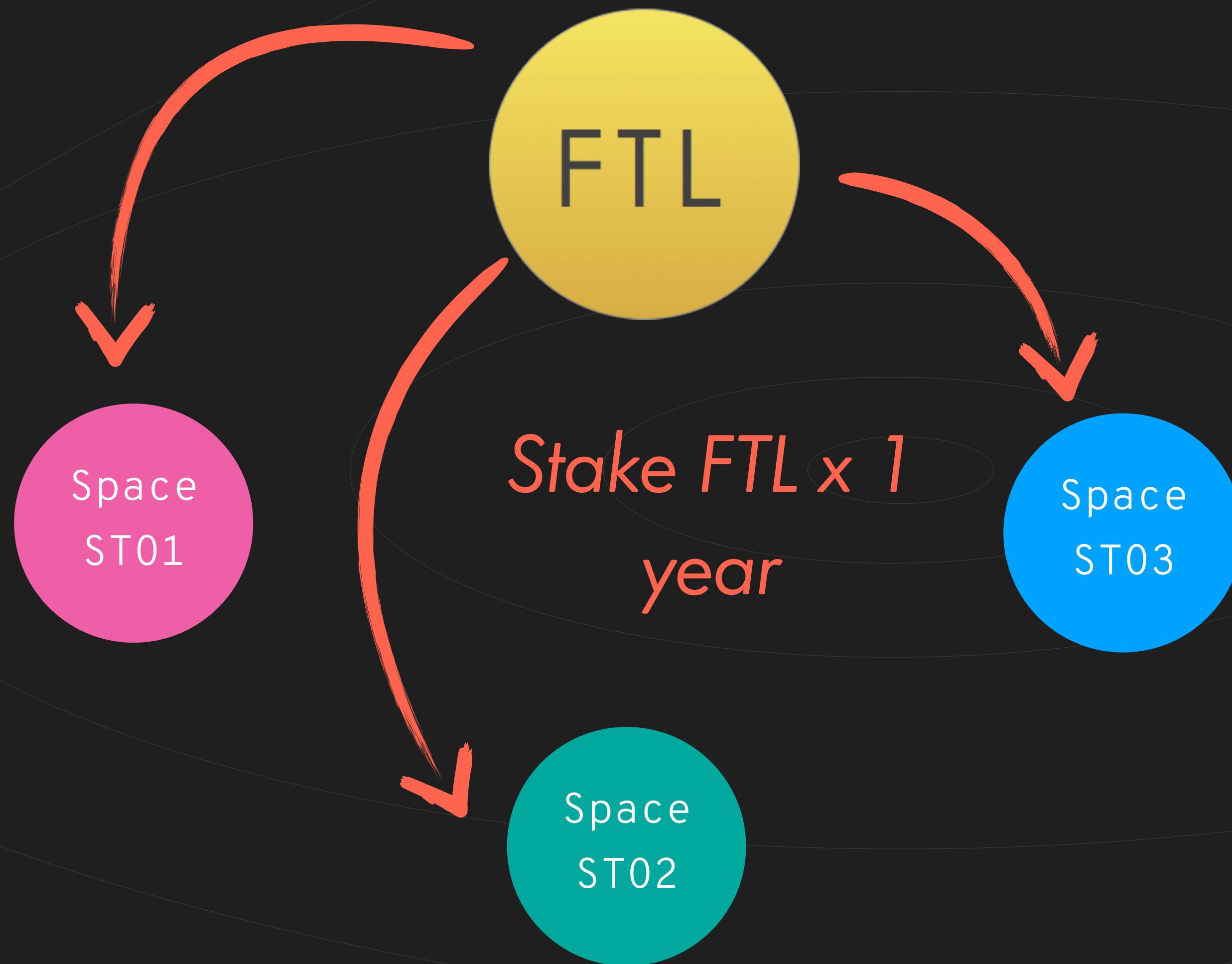
The screenshot shows the Space Decentral platform interface. At the top, there's a navigation bar with a search icon, a bell icon, an envelope icon, and a user profile picture. Below the navigation is a banner featuring an astronaut on the moon with the text "Lunar Concrete". The banner includes a "10,132" count, a plus sign, and a three-dot menu icon. Below the banner is a navigation bar with tabs: "Dashboard" (which is active and highlighted in red), "Crew", "Proposals", "Guidelines", and "Files". The main content area has sections for "Overview", "Grant", "Deadline", "Proposals", and "Files". The "Overview" section contains a paragraph of text about the Moon's history. The "Grant" section shows "FTL 200,000" and the "Deadline" as "July 6th, 2019". The "Proposals" section lists a proposal titled "Lunar-smart: Nanotech concrete" by "Author 1 · Author 2 · Author 3", with a note about skyscrapers and domes in lava tubes, 6 likes, 3 comments, and a timestamp of "6 hours ago". The "Files" section lists "2017 Feasibility Study" and "Mission Timeline & Budget".

Space Decentral is not affiliated with Space Angels, the X Prize or Wikipedia. This is an illustration that represents how Space Decentral can be considered a hybrid of these three organizations.

Components of the Space Decentral Network



An ecosystem to spawn more space tokens



- Besides governance, FTL also provides a unique privilege of gaining early investment access to businesses incubated on the network
- While FTL is not a security token, spin-off projects can have security token offerings
- Can invest up to staked balance and it must have been staked for a minimum of 1 year

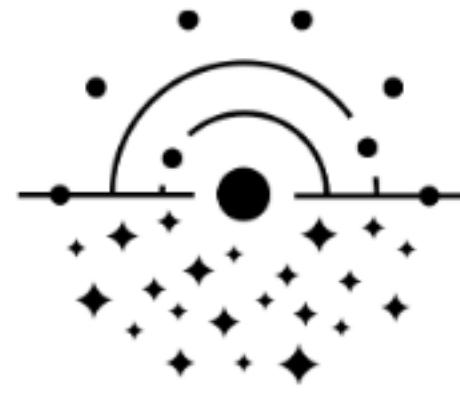
FTL doesn't provide ownership in Space Decentral or spin-offs. Holding FTL does not provide dividends or distributions.



Our immediate goal is to build
the technological infrastructure
to act as the launch pad for an
international space agency

Space Agency in a Box

The High-level Stack



Space Decentral

Distributed Engineering Tools

Enable everyone to contribute to a new global space agency in a permissionless manner



Aragon

Governance & Dapp Framework

Resource allocation and tasks will be openly organized with encoded operational procedures



Ethereum

Blockchain

Facilitate trust with auditable work, open source smart contracts, and transparent finances.

The Space Decentral Network

Project Landing Page

The screenshot shows the project landing page for "Lunar Concrete". At the top, there's a banner with a photo of an astronaut's legs and a small sign that says "Lunar Odyssey". Below the banner, the title "Lunar Concrete" is displayed, along with a count of 10,132 supporters and a description: "Let's design lunar concrete by using simulated lunar soil and mixed with polymers." There are also "Add" and "More" buttons. Below the banner, the navigation menu includes "Dashboard" (which is highlighted in red), "Crew", "Proposals", "Guidelines", and "Files".

Overview

There must be a reason why Arthur C. Clarke named the first intelligent primate "Moonwatcher" in his 2001: A Space Odyssey. Both the book and the movie literally open with a sequence of the primate watching a crescent moon. Also, British astronomer Sir Richard A. Proctor writes "Altogether the most important circumstance in what may be called the history of the Moon is the part which she has played in assisting the progress of modern exact astronomy. It is not saying too much to assert that if the Earth had no satellite the law of gravitation would never have been discovered."

Files

- 2017 Feasibility Study
- Mission Timeline & Budget

- FTL granted to proposals selected for the Space Decentral program
- Must be staking member to submit proposals, in addition to paying a fee in FTL (reduces spam and incentivizes peer review)
- Peer reviewers receive 80% of the fee; and 20% goes to the network
- Once proposal activated, greater community can help execute

The Space Decentral Network

Consultant Portal

The screenshot shows the homepage of the Space Decentral Network Consultant Portal. At the top left is the logo "SPACE DECENTRAL". To the right are icons for search, notifications, email, and user profile. Below the header is a section titled "MEET THE COMMUNITY" with a sub-section "Our community is unique in that they are passionate about humanity becoming spacefaring. Many are available for consulting work for your space project!". On the left side, there are filters for "Keyword", "Location", "Skills & Interests", and "Schools". The main content area is titled "Consultants" and shows six profiles in two rows of three. Each profile includes a photo, name, title, location, and their FTL rate in a yellow button.

Consultant	Title	Location	FTL Rate
Patrick Donovan	Mission Engineer	Long Beach, California	40 FTL
Rini Merdjanova	Spacesuit Designer	Venice, California	60 FTL
Andrew Xue	Video Editor	San Francisco, California	80 FTL
Brayden DeVito			30 FTL
Kevin Siegler			80 FTL
Giulio Prisco			60 FTL

- Staking members can offer consulting services

- Bonuses provided per job when services denominated in FTL

- Work disputes will be handled with the Aragon Network Court

Awarded \$150k grant to develop Aragon Planning Suite

Six applications that will be useful for many DAOs – including Space Decentral

Awarded \$150k Grant

April 2018



ARAGON

- **Allocations:** Propose multi-party allocations
- **Range Voting:** Vote on an allocation percentage per project, task, or person
- **Consensus:** Facilitate consensus on the value of bounty, project, or salary
- **Address Book:** Maintain a list of Ethereum addresses mapped to human-readable names
- **Rewards:** Distribute rewards based on tokens
- **Projects:** Curate issues and propose bulk-bounties

Aragon Planning Suite

The image displays two screenshots of the Aragon Planning Suite interface. On the left, the 'Projects' module shows a list of tasks with their status, deadline, experience level, and assigned SDN rewards. On the right, the 'Rewards' module shows a summary of contributors, average payout, monthly burn rate, and total paid this year, along with a detailed view of active and inactive rewards.

Projects Module:

- Overview:** Research to determine landing site (coral #389), Beginner, Pending funding, Due in 4 weeks, 300 SDN.
- Issues:** Design template for lander selection trade study (coral #390), Intermediate, Funded, Due in 4 weeks, 500 SDN.
- Settings:** Perform initial research for lander trade study (coral #388), Advanced, Pending funding, Due in 4 weeks, 600 SDN.
- Issues:** Compile report for lunar regolith analysis methods (coral #411), Beginner, Fulfilled, Due in 4 weeks, 800 SDN.
- Settings:** Enhance landing page to hide inactive projects (spacedecentral-network #410), Beginner, Unallocated, Due date not set, 500 SDN.

Rewards Module:

CONTRIBUTORS	AVERAGE PAYOUT	MONTHLY BURN RATE	TOTAL PAID THIS YEAR
32	\$145	\$9,994.94	\$19,989.88

Active Rewards:

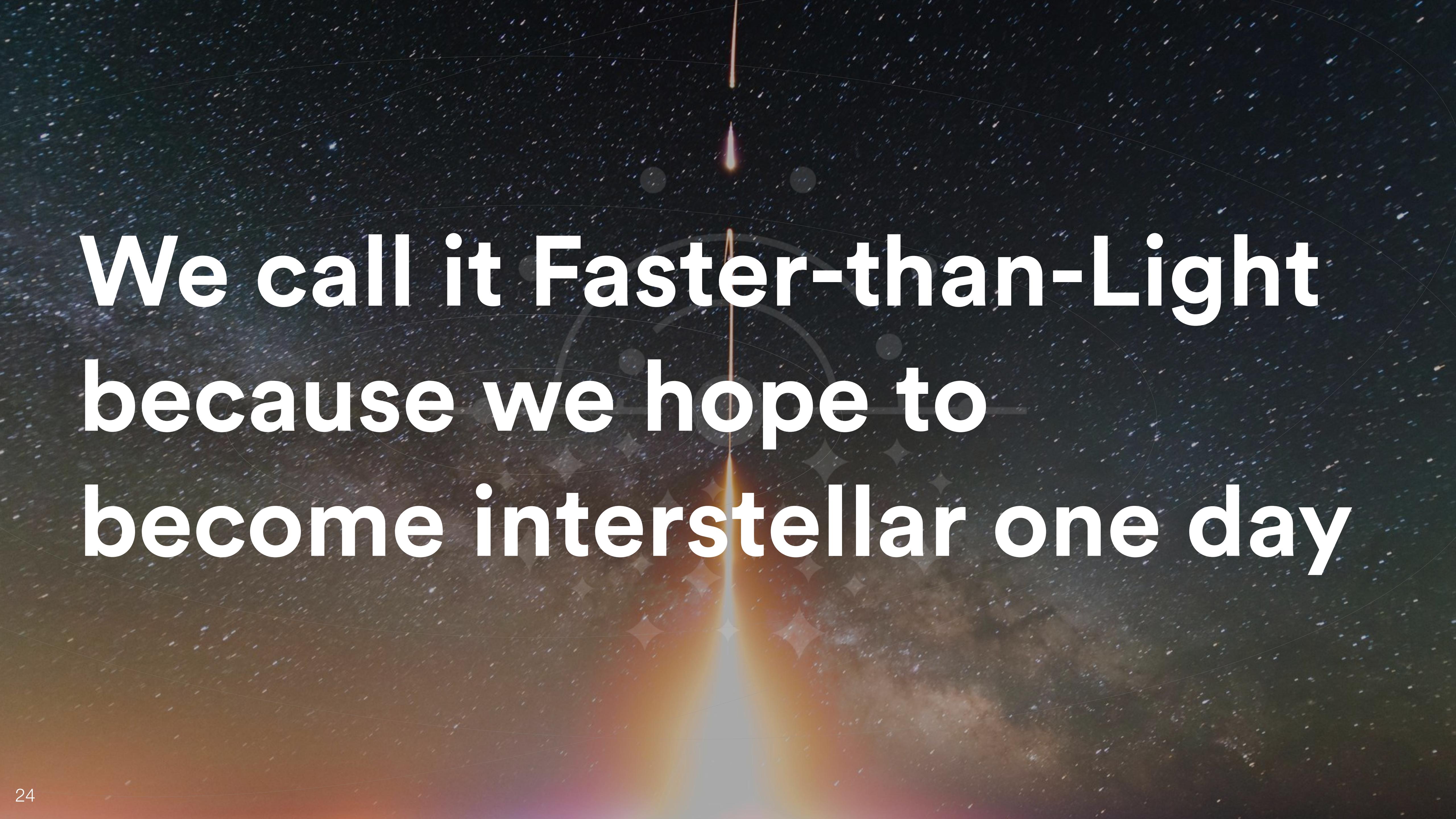
ACCOUNT	TYPE	CYCLE	NEXT PAYOUT	AMOUNT
Coral	Dividend	Monthly	10/30/17	800 FTL \$800 USD
Planning Suite	Period Reward	One-time	10/15/17	1,000 FTL \$1,000 USD
Maximum Jailbreak	Dividend	Monthly	10/30/17	800 FTL \$800 USD
spacedecentral.net	Dividend	Monthly	10/30/17	800 FTL \$800 USD

Inactive Rewards:

ACCOUNT	TYPE	CYCLE	LAST PAYOUT	AMOUNT
Coral	Dividend	Monthly	09/30/17	500 FTL \$500 USD
spacedecentral.net	Period Reward	One-time	09/05/17	500 FTL \$500 USD

Tokenized task management to create provenance of contributions

Rewards engine enables customized incentive schemes

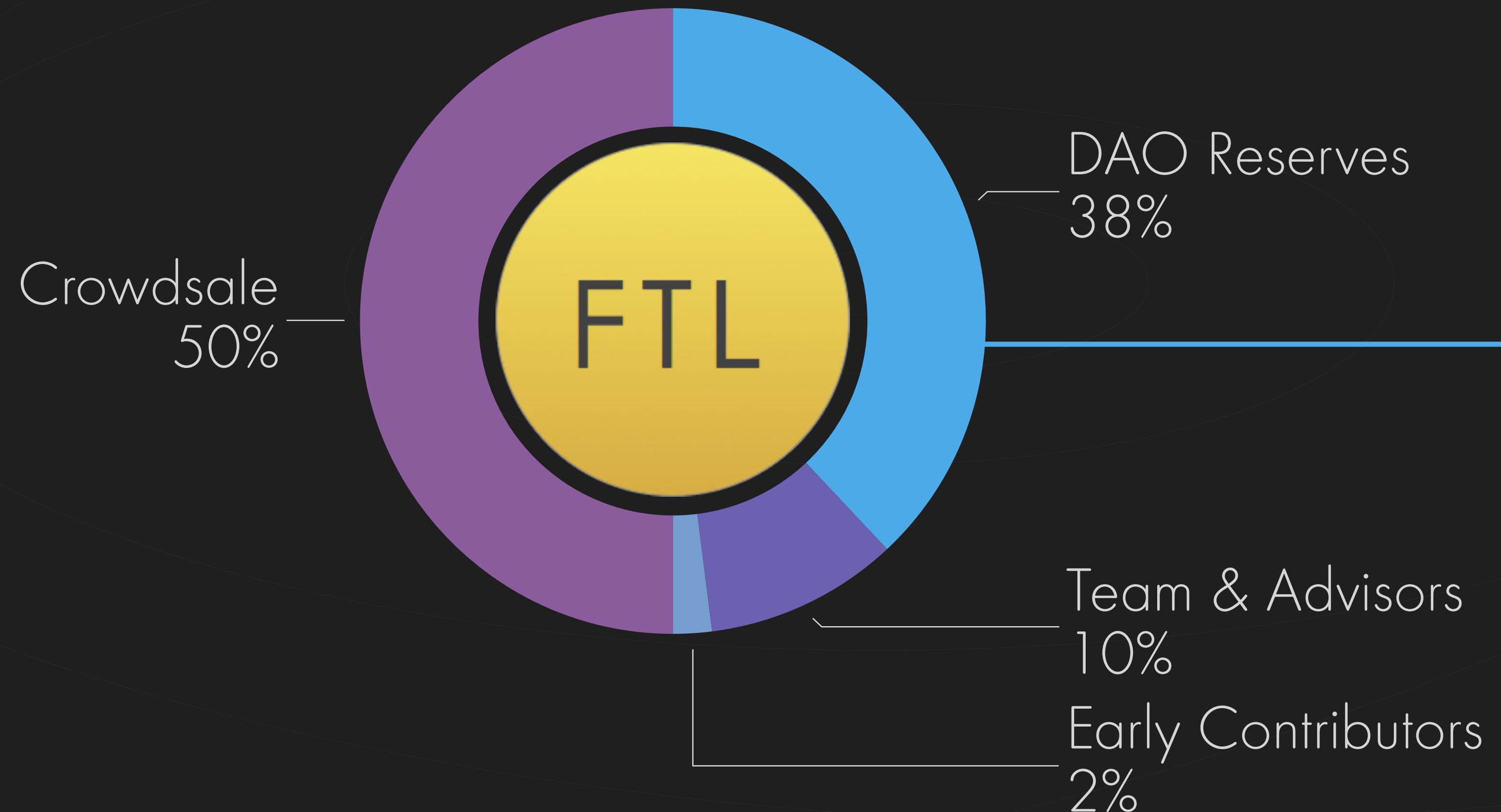


We call it Faster-than-Light
because we hope to
become interstellar one day

FTL Token Allocation

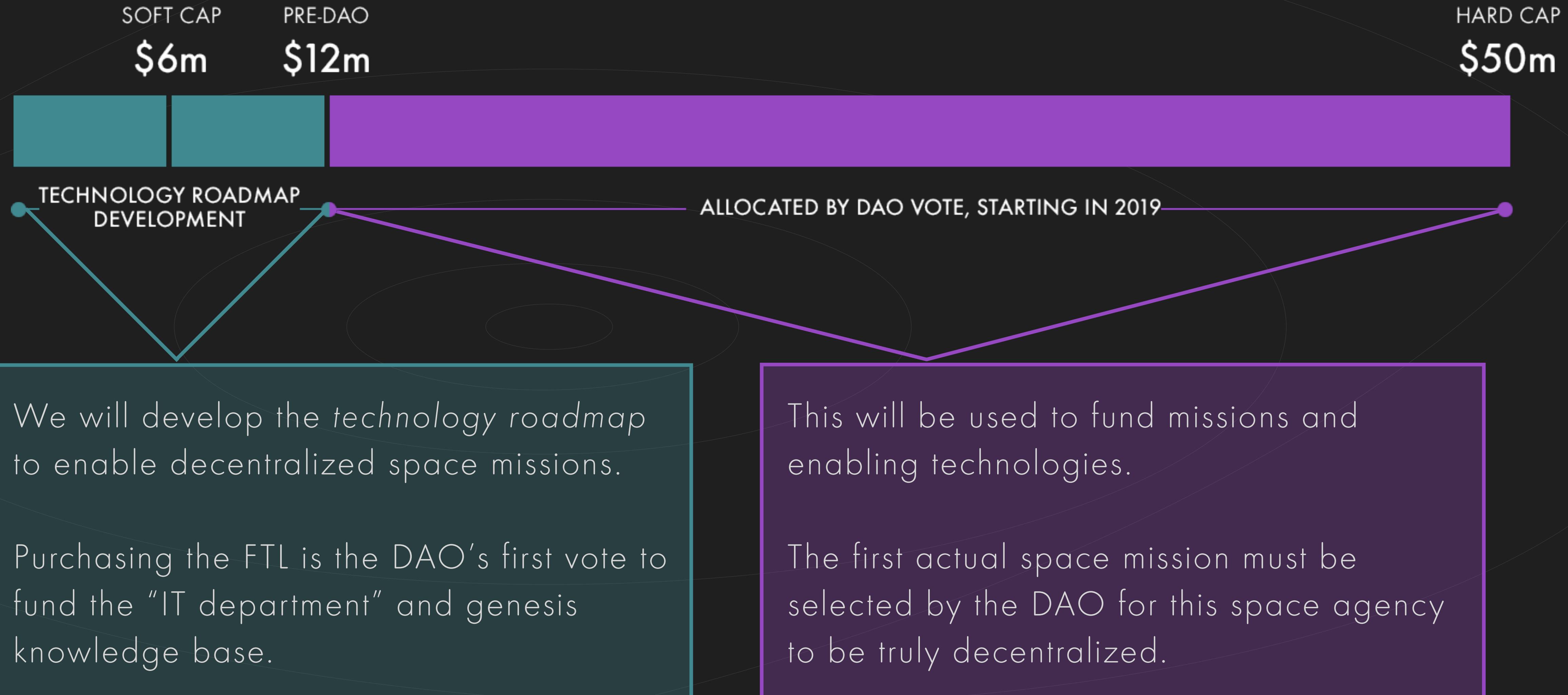
299,792,458 tokens total

...the speed of light

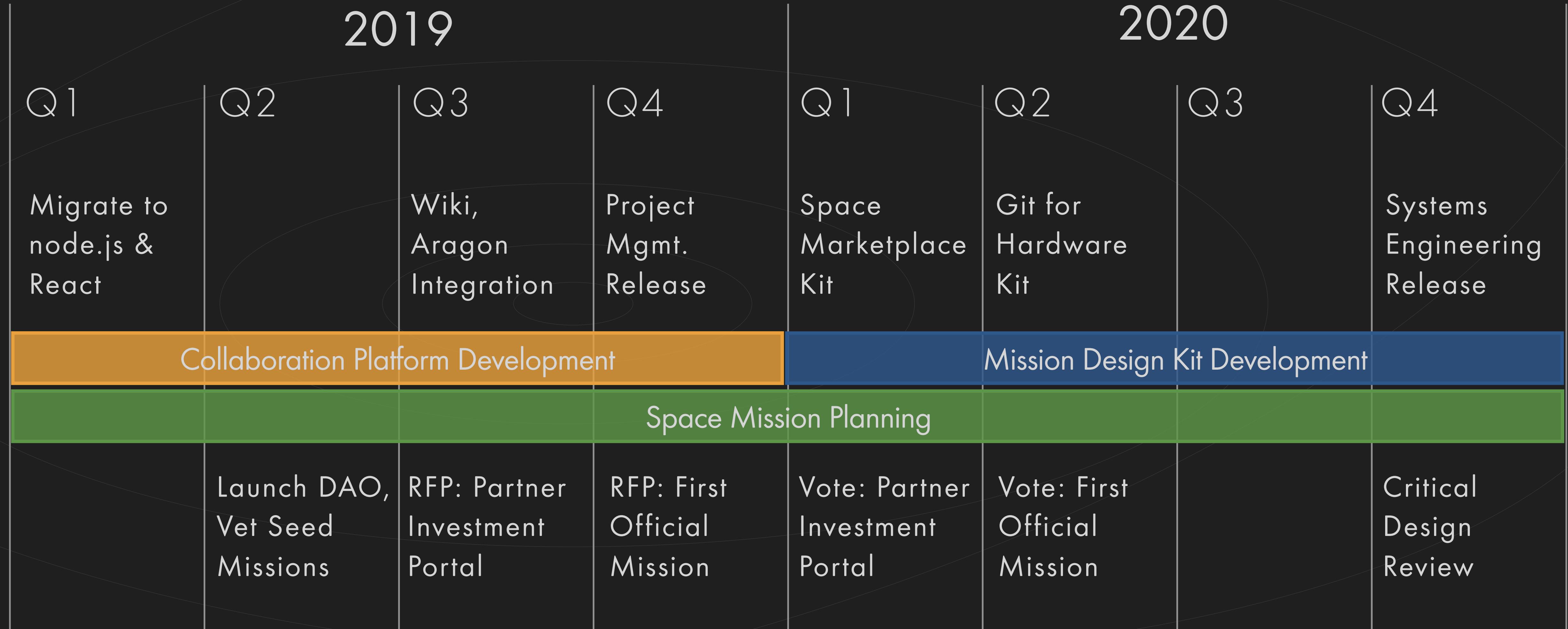


To build a thriving ecosystem, the Space Decentral DAO will transparently distribute 38% of the token supply over at least 4 years to contributors of the network's strategic plans, projects, and knowledge base. Additionally, these reserves can be sold to fund missions.

Funding Milestones

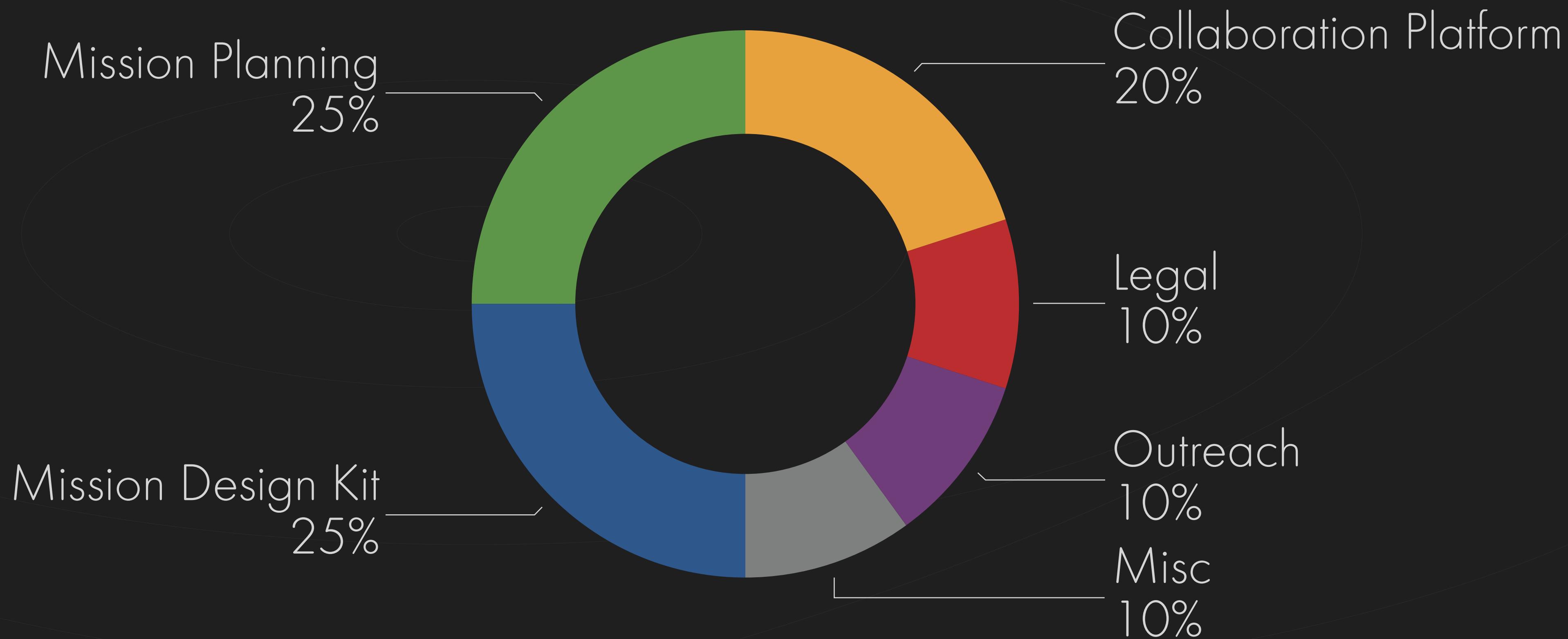


Technology Development Roadmap



Use of Technology Development Revenue

How the \$6-\$12m technology development funding will be allocated



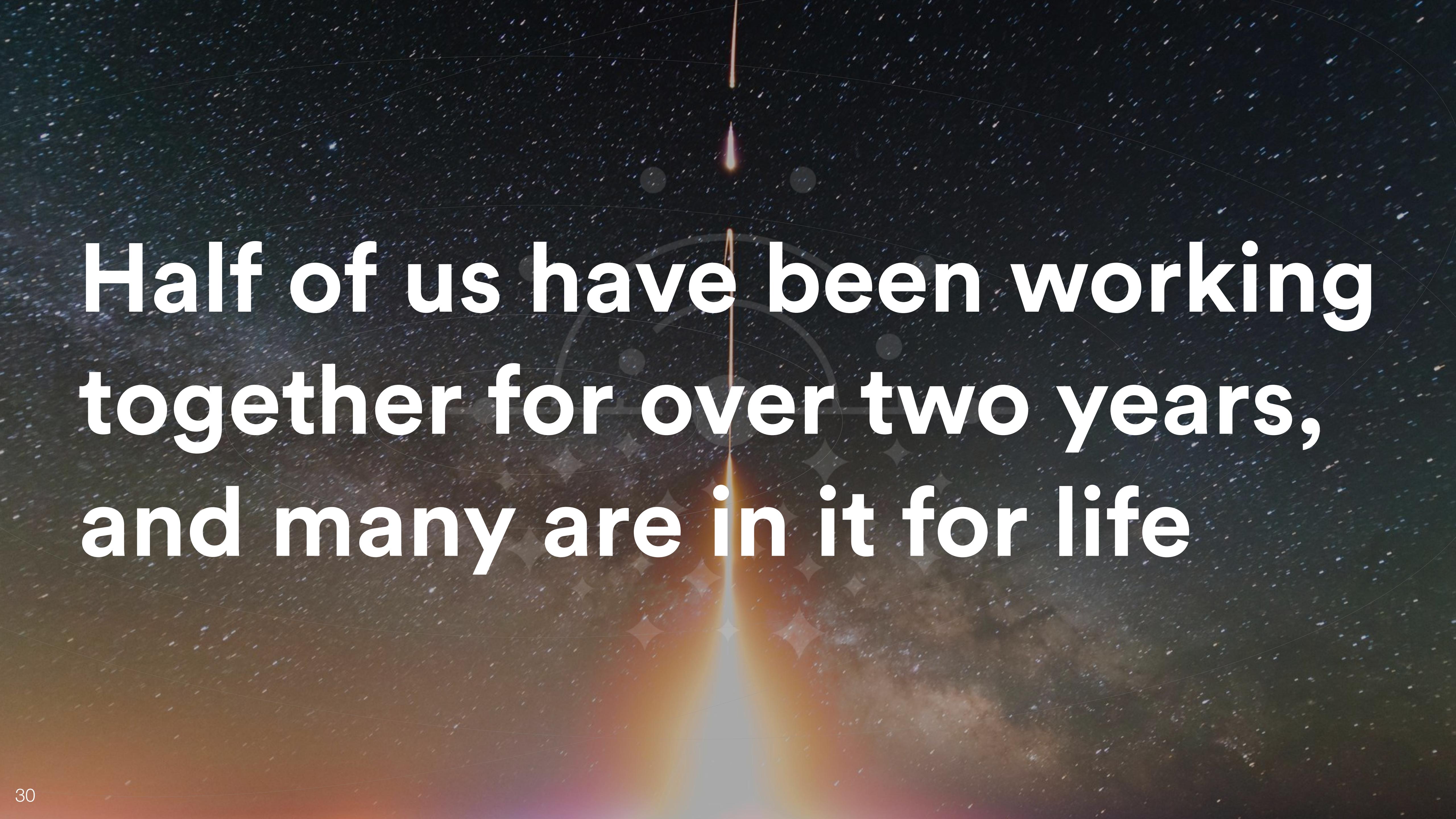
What about the other \$38m?



- If hard cap reached, can immediately begin X Prize-like competition to attract an intelligent crowd
- More collaborative than X Prize, as openness is incentivized
- Even though the Lunar X Prize was \$30m (and no team won), **over \$300m ended up being invested** or donated to teams (10x prize amount)



FTL-stakers have privileges to become early investors in businesses incubated on the network



Half of us have been working
together for over two years,
and many are in it for life

Team



Yalda Mousavinia

Strategic Lead

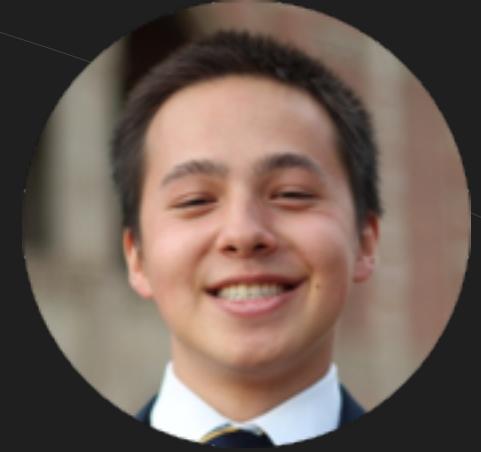
Previously Sr. PM @ Oracle, PM/UX 10 yrs,
BS in Mechanical Engr. (UC Berkeley) &
Astronautical Engr. Cert (UCLA).



Marc Cohen

Mission Architecture Lead

Licensed architect devoted to space architecture. Previously at NASA Ames (26 yrs), Northrop Grumman (4.5 yrs).



Patrick Donovan

Engineering Lead

Seasoned in structural design. NASA recognized for Mars ISRU concept. BS in Civil Engr. (UCLA) & licensed PE (CA).



Radek Zasiadcuk

Tech Lead, SDNetwork

Multi-skilled full stack developer, senior system administrator, DevOps. Previously at Oracle (13 yrs).



Kevin Siegler

Software Engineer

Software and smart contract developer. BS & MS in Mechanical Engr. (Northwestern). Expected MS in CS (Georgia Tech).



Suzana Bianco

Operations Lead

Seasoned architect. MBA (Fundação Getúlio Vargas). MS in Space Architecture (University of Houston).

Team

**Giulio Prisco**

Media Lead

Writer and futurist, covering science, tech and crypto - previously at Bitcoin Magazine.
Early career at CERN, ESA.

**Brayden DeVito**

Manufacturing Engineer

12 yrs aerospace manufacturing and welding expert. Contributed to projects for NASA JPL and SpaceX.

**Sean Marquez**

Software & Systems Engineer

Smart contract developer and models-based systems engineering aficionado. BS in Mechanical Engineering (UC Irvine).

**Otto Garcia**

Full Stack Developer

Dapp developer. Self-taught developer and open source aficionado. Lead blockchain education programs.

**Quazia**

Tech Lead, Planning Suite

Software and smart contract developer. Aragon DAC dev lead. BS in Applied CS from Rochester Institute of Technology.

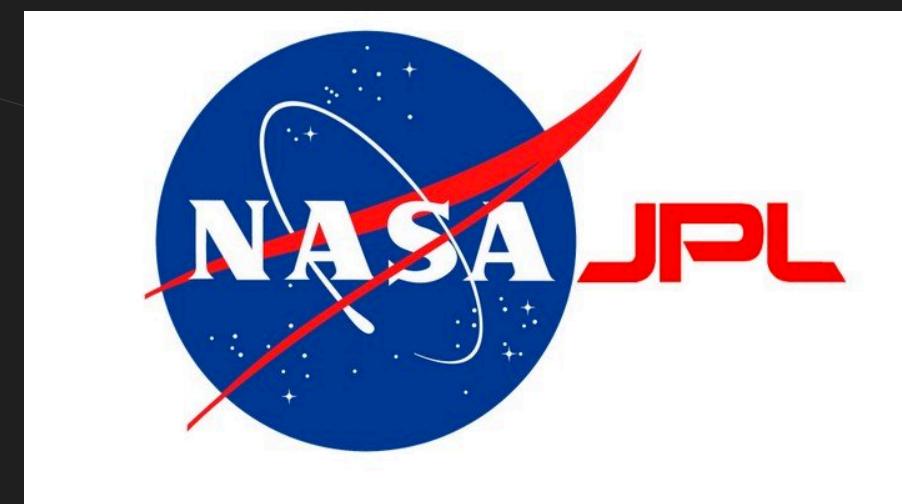
Advisors



Brent Sherwood

Program Manager, JPL

Space architect with 29 years of professional experience in the space industry. He has been at NASA JPL for 12 years, where he is Program Manager for planetary mission formulation. He funds and coaches teams that create and propose mission concepts for scientific exploration.



J. Simmons

President, Mach 30

Founded and serves as President of Mach 30, a non-profit dedicated to hastening the advancement of humanity into a spacefaring civilization through the development of open source spaceflight hardware. J. received his doctorate in Space Systems Engineering from the Air Force Inst. of Technology.



Paolo Tasca

Executive Director, Center for Blockchain at UCL

FinTech economist specializing in P2P financial systems. Advisor on blockchain for the EU Parliament and the United Nations. Founder and Executive Director of the Centre for Blockchain Technologies at University College London.



Interested in shaping the future of space exploration?

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White Paper

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Governance Paper



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