Supported Self-Driven Learning Operating System

selfdriven.foundation

Whitepaper

Version 1.9

An operating system
(framework & cloud service)
to support self-driven learning within an existing learning environment.

Intro

In our view there is an opportunity for a learning operating system that:

- Captures all of a learner's activity and growth
- Supports self-driven learning
- Connections learners with their learning partners.
- Recognises creativity and collaborative problem solving ability above rote learning

A community/society is a function of us and we need to give young people opportunities to authentically facilitate a community. A learning community is a great place to put this into practice, i.e. governance, improving the environment, provision of food, clothing, caring for others etc.

We believe that people (learners) with the following attributes, are good members of a modern society / community:

- Self-driven (can initiate and act on a decision to improve)
- Self-aware (as it relates to self and others)
- Importance of the collective (community)

Problems

The selfdriven operating system seeks to solve the following problems:

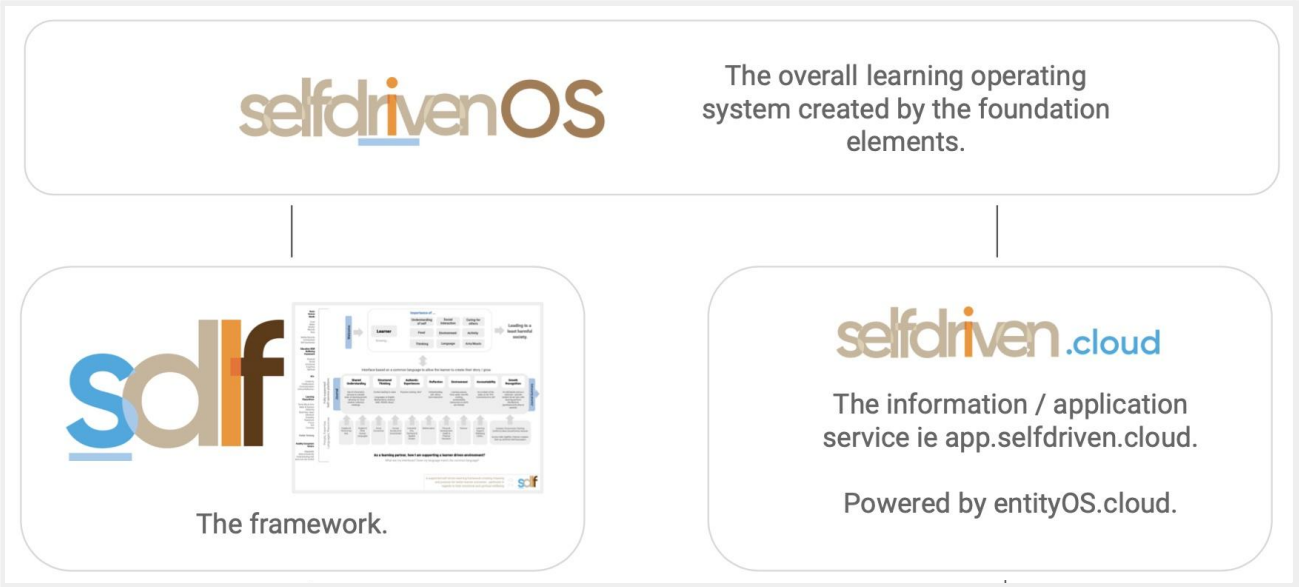
- Current learning operating systems do not adequately capture experience-based learning / all of learning activity
- The needs of the learner do not always align with what the learning environment needs to measure / is measuring
- There is no trusted source of information for learning partners (including high schools, universities, TAFE etc) to ensure learners make the best decisions about their future learning pathway

The learning operating system

The learning operating system is made up of a framework and a cloud service.

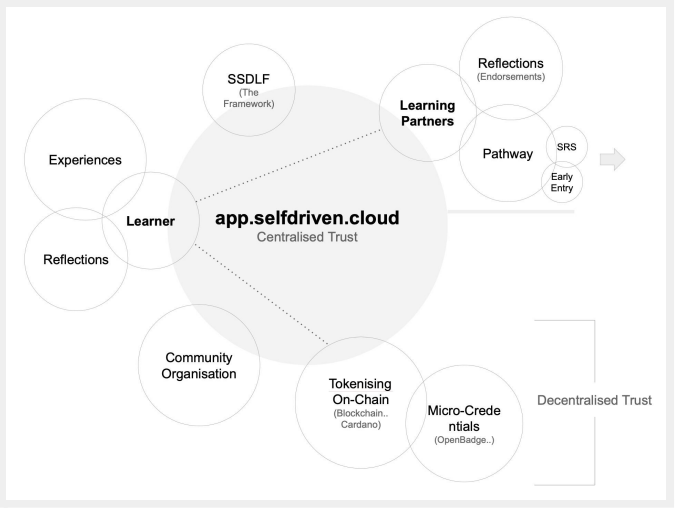
The framework encompasses the values, structures and language used to support the self-driven learner.

The cloud service is based on an open architecture enabling interoperability with new standards and services as they develop globally.



Design Basis

The operating system is based on the first principle of why learning environments exist; to meet basic human needs, leading to a least-harmful/most-caring society. The operating system is designed to augment an existing learning environment, not replace it - as much as it can operate independently.



Trust & Pathways

The learning operating system establishes trust (*centralised & decentralised)* in regards to learner growth *(achievements, endorsements etc)* between the key stakeholders in a learning pathway.

The learning framework

The framework starts with basic human needs as its first principle.

The learning framework is learner first; everything within the selfdriven operating system is contextualised to the learner. As a unifying framework, it works with other existing frameworks.

It augments existing learning environments and supports their local values and structures.

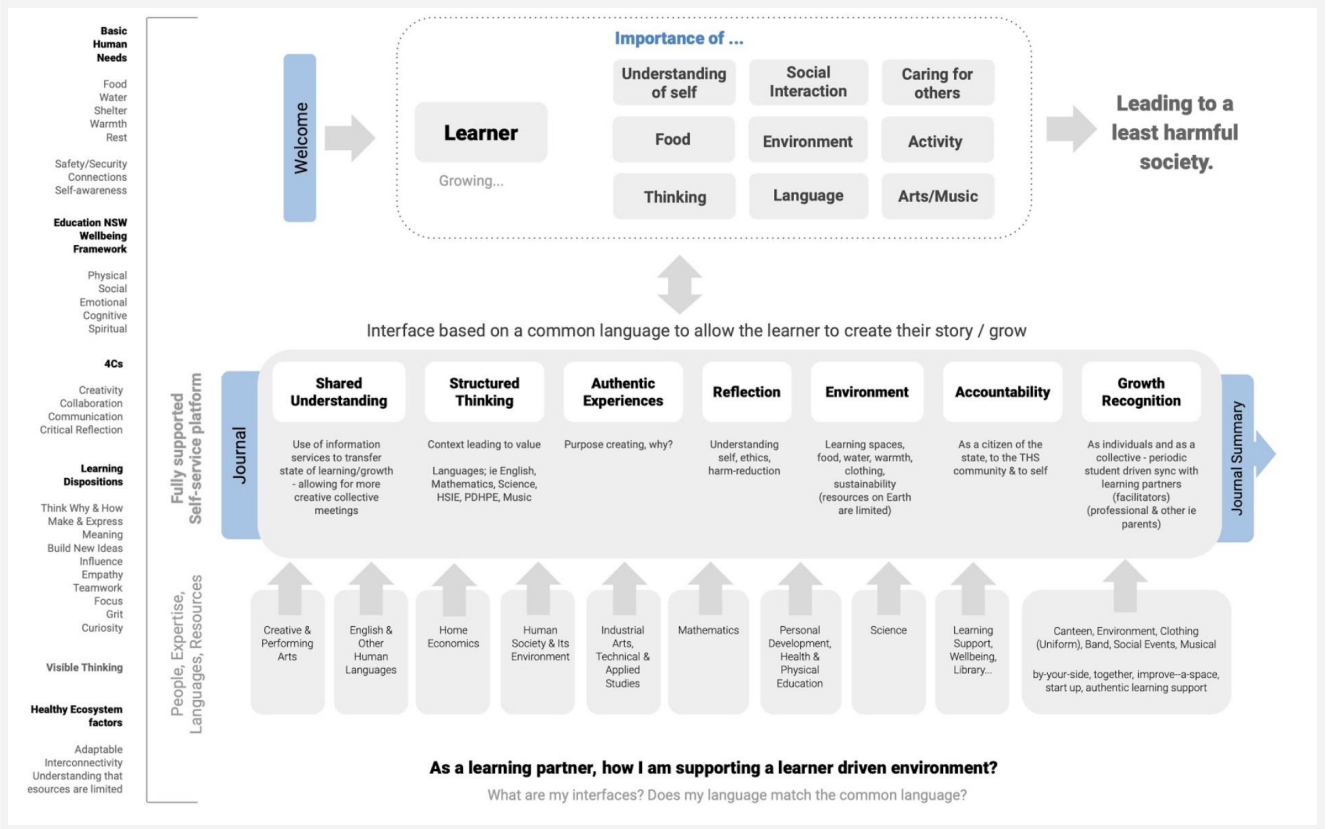
The framework's value is realised in the *selfdriven.cloud* information service and associated app.

The framework has three key layers:

- **Layer 1 - Importance of**
  Why does the learning environment exist? What is its value to the learner and our society?

- **Layer 2 - Common Components**
  The key structural components that the services are built on, the language from which the framework is derived.

- **Layer 3 - The Existing Learning Environments**
  State or independent based.



Layer 1 - Importance of

Understanding / sense of self	The ability to understand yourself and your impact on others.
Social interaction	Social connections and the importance of the collective/community.
Caring for others	And what that means to us.
Food	What you eat (nutrition) and what you listen to can have a dramatic impact on your well-being, on your brain and on your brain's ability to learn. ** Food as an input.*
Environment	How our environment impacts us and our ability to impact our environment.
Activity	Movement, teams, play.
Thinking	Thinking as a tool to reflect, rationalise, reason - know our own mind.
Language	We understand the world through language, and the ability to improve our lives and our society depends on our ability to use languages (English, Maths, Science, Music etc) to support our thinking.
Arts/Music	How we see and interpret the world and how we feel. Both as creators and consumers.

Layer 2 - Common Components

Shared Understanding	The more we share and understand, the greater the potential for less harm.
Structured Thinking	How the world occurs to you using a broad set of languages; english, maths, science, music, HSIE etc.
Authentic Experiences	Purpose and context. Establish the why and find passion.
Reflection	How do I learn? Are my actions causing harm? This is me. Reflections can be unstructured or structured.
Environment	How you impact it and how it impacts you. Learning spaces.
Accountability	As a citizen of the state. To the learning framework. To the learning community (others) To self
Growth Recognition	Reflections. Endorsements by self or learning partners. Basis for collaborative meetings with learning partners.

Layer 3 - Existing Learning Environments

State or independent based learning environments well established structures and values eg Primary & Secondary Schools, Universities, TAFE, Apprenticeship Programs, Other Programs etc

The learning ecosystem / “tribe”.

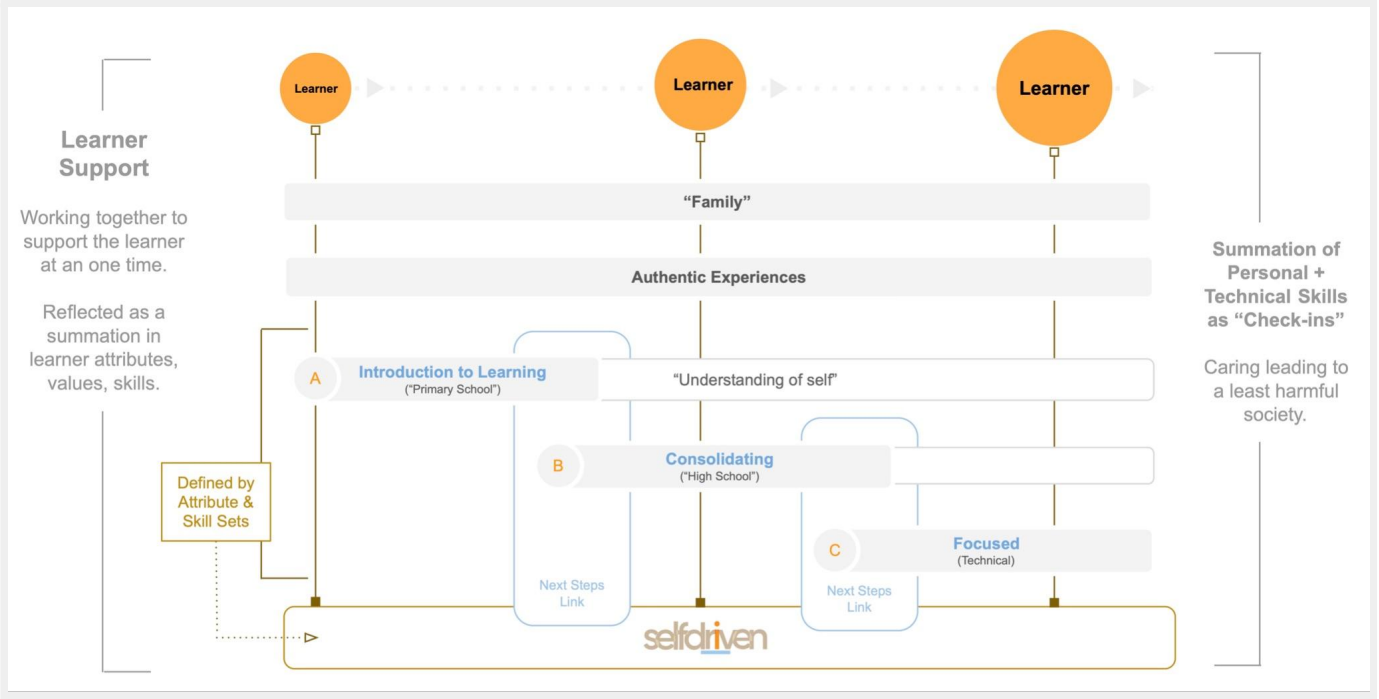
Learning communities, services & people working together to support the learner, using the *selfdrivenOS* and existing well-proven learning frameworks and resources.

With the three key core stages of learning:

A. Introduction to Learning (“Primary School”)

B. Consolidating (“High School”)

C. Focused (Technical)



Well-being

The well-being section of the operating system works directly and indirectly to positively impact well-being - via recognition or positive behaviour and mechanisms to directly communicate when the young person is not going OK ie “How Going?”.

Indirectly;

- Self-awareness via values in the Supported Self Driven Learning Framework
- Recognition of growth and positive behaviour (endorsements, achievement and reflections by learning partners)

Directly;

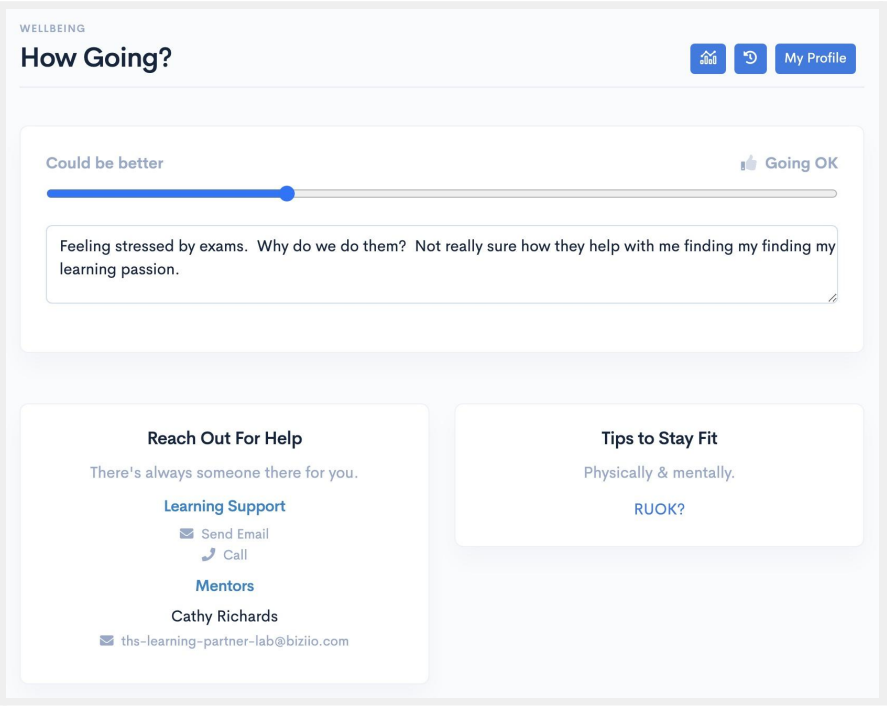
- Record via *How Going?* anxiety level and source of anxiety (if anxiety exists)
- Share *How Going?* with professional well-being specialists and mentors
- Check reflections by learner for language that suggests may be an anxiety issue (opt-in or community based opt-in to manage the risk)
- Summarised dashboard for professional learning facilitators to manage community level anxiety or sources of anxiety - ie *Community How Going?*

See associated document on the selfdrivenOS well-being for more details.

How Going?

A simple sliding scale between “Could be better” (0) and “Going OK” (100) with direction to:

- Reach out for Help - *less than 50*
- Tips To Stay Fit (Physically & Mentally) - *more than 50*

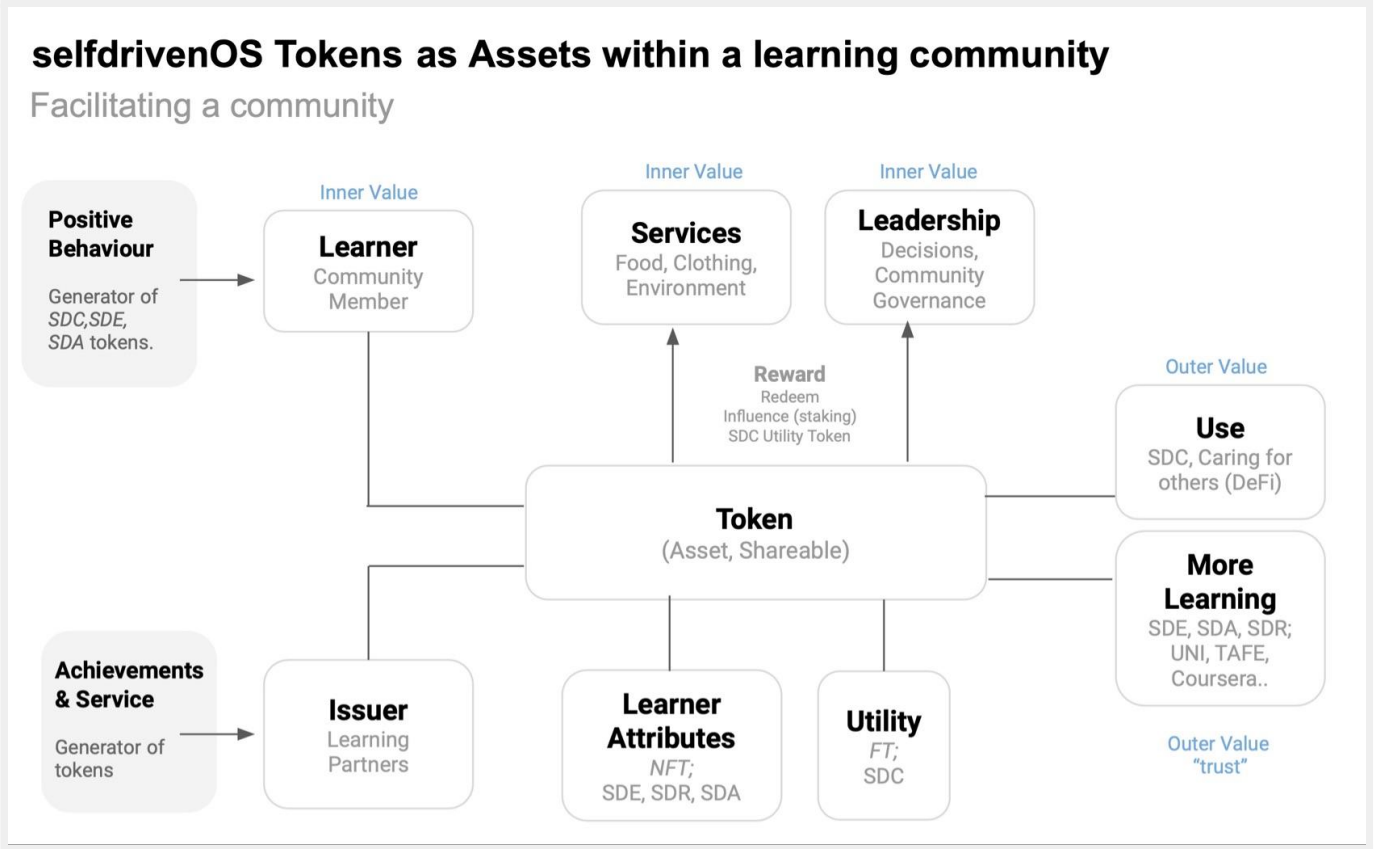


Positive behaviour

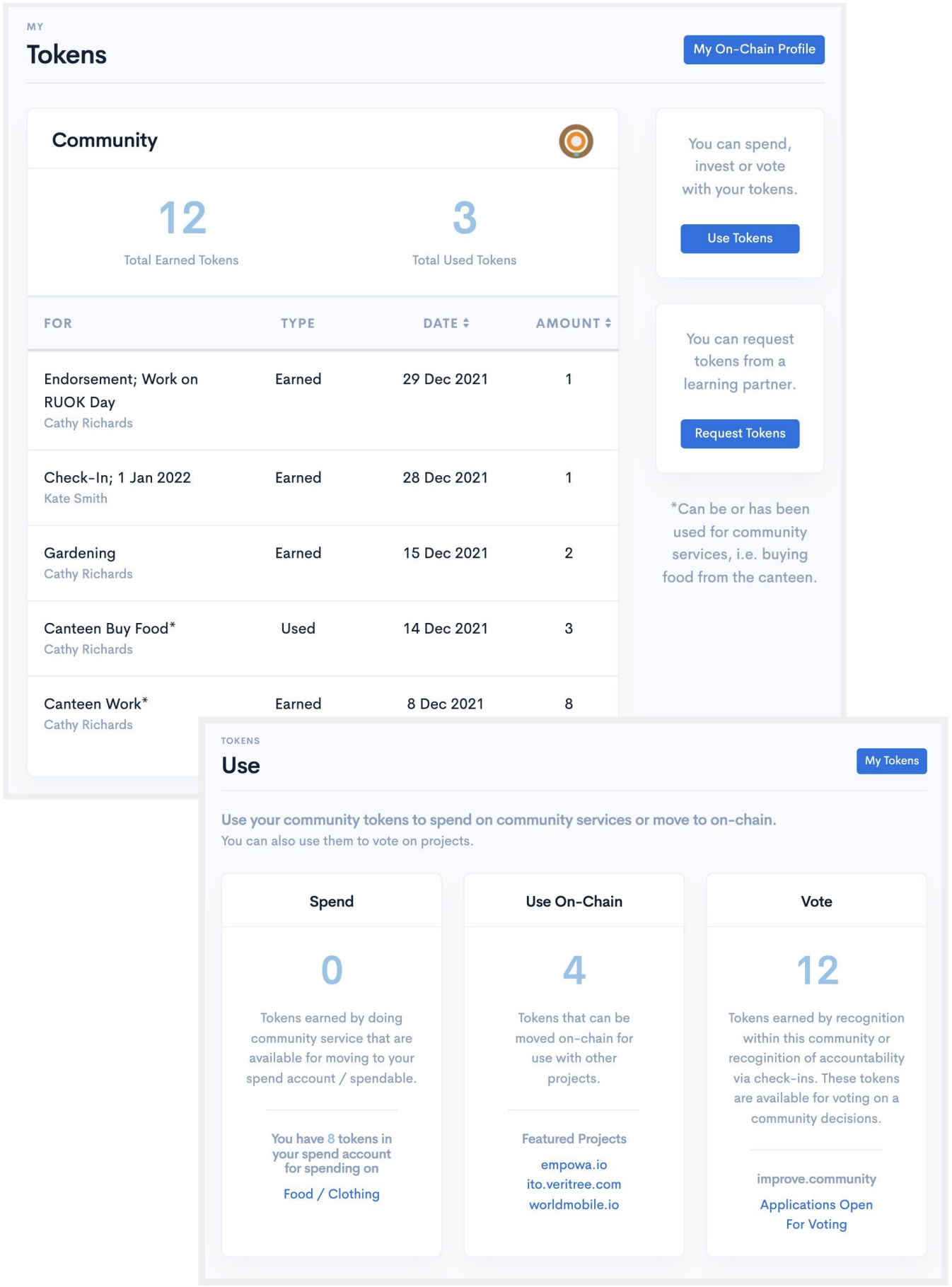
In addition to growth recognition of learning outcomes, positive behaviour, in the form of endorsements, is also recognised in the form of “tokens / learner-shareable-assets” (SDC & SDE token).

Tokens are blockchain based, SDC can be used for inner value & *outer value* and SDE can be used for outer value (refer following diagram). They can also be used in governance decisions based on stake *i.e.* community leadership

Tokens are issued by learning partners for positive behaviour but also for service to the community (eg working in the canteen). Issuing tokens is based on activity within *selfdriven.cloud*.



Token totals can be used as quantifiable summarised representation of key self-driven learning objectives; selfdriven (check-ins), self-aware (reflections/endorsements) & sense of community (service) - for use within community and next steps in learning.


MY
Tokens
My On-Chain Profile
Community
12
Total Earned Tokens
3
Total Used Tokens
You can spend, invest or vote with your tokens.
Use Tokens
You can request tokens from a learning partner.
Request Tokens
*Can be or has been used for community services, i.e. buying food from the canteen.
FOR
TYPE
DATE
AMOUNT
Endorsement; Work on RUOK Day
Cathy Richards
Earned
29 Dec 2021
1
Check-In; 1 Jan 2022
Kate Smith
Earned
28 Dec 2021
1
Gardening
Cathy Richards
Earned
15 Dec 2021
2
Canteen Buy Food*
Cathy Richards
Used
14 Dec 2021
3
Canteen Work*
Cathy Richards
Earned
8 Dec 2021
8
TOKENS
Use
My Tokens
Use your community tokens to spend on community services or move to on-chain.
You can also use them to vote on projects.
Spend
0
Tokens earned by doing community service that are available for moving to your spend account / spendable.
You have 8 tokens in your spend account for spending on
Food / Clothing
Use On-Chain
4
Tokens that can be moved on-chain for use with other projects.
Featured Projects
empowa.io
ito.veritree.com
worldmobile.io
Vote
12
Tokens earned by recognition within this community or recoginition of accountability via check-ins. These tokens are available for voting on a community decisions.
improve.community
Applications Open For Voting

Improvement Cycle

The *Support Self Driven Learning Framework (SSDLF)* includes an improvement cycle for continuous incremental improvement.

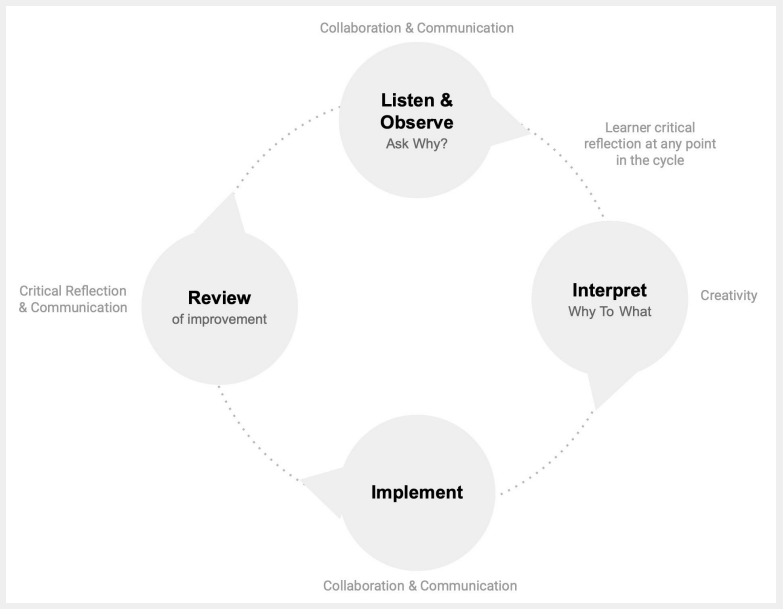
The improvement-cycle includes learner reflection at any point within the cycle.

The improvement cycle and associated project/task/action management components within the selfdrivenOS (app.selfdriven.cloud) can support project-based-learning.

See associated document on the selfdrivenOS improvement cycle for more details.

Points in the Cycle

Listen & Observe	Who & Why	Collaboration & Communication
Interpret	Why to What	Creativity
Implement	What to How	Collaboration & Communication
Review	Reflect back to Why, What, How on the improvement	Critical Reflection & Communication



Learner Activity

Learner activity can be recorded by the learner or their learning partners.

The three core activity types are:

Achievements	These are achievements that can be linked to known skills. Achievements are issued by learning partners.
Reflections	These are reflections on the learner, by the learner (self) or learning partners. Than can also be linked to unknown attributes and rated (0 to 100) ie Focus.
Endorsements	Endorsements are issued by learning partners based on their observations or response to a learner request e.g. “Can you endorse this application for next steps learning”.

Skills

selfdriven has a set of known skills that can be linked to achievements and thus learners. e.g. a knowledgeable of *English Year 11 Level 1* is *English 11-1-K*. Skills are broken into parts with corresponding codes to make a unique skill identifier for use as a common reference by learners and their learning partners:

Part Name	**Example**	
Domain	English	202
Source	AU National Curriculum	01
Skill / Level	English Year 11, Level 1	111
Capacity	Knowledgeable (K)	2
	Selfdriven Skill ID	202-01-111-2 (#202011112)

Skill Capacities

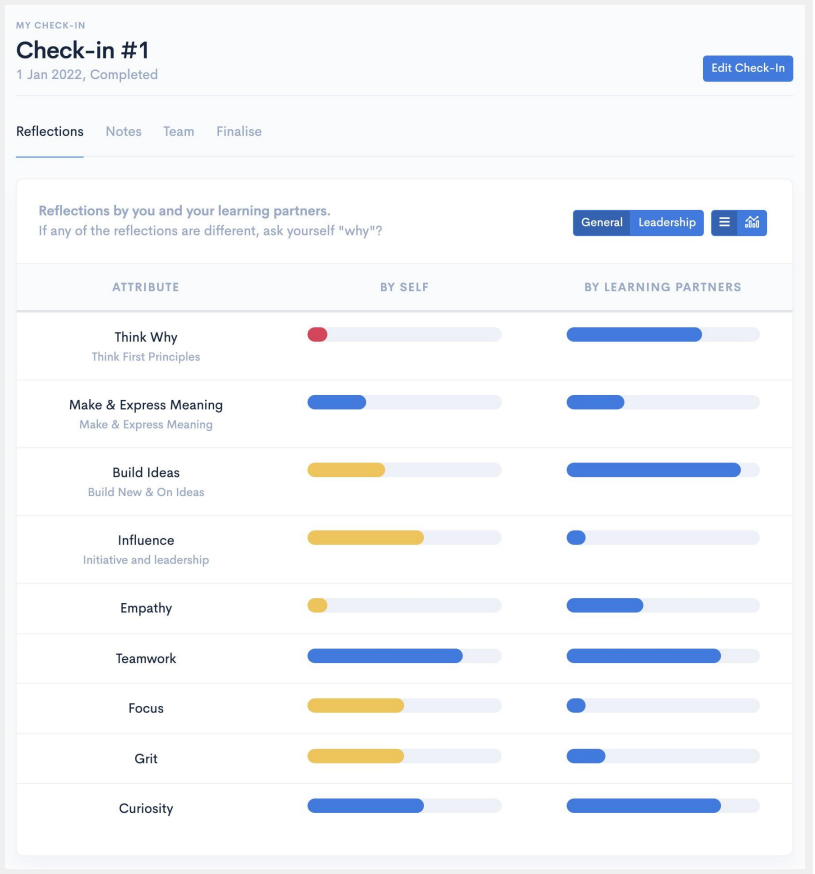
Type	**Code**	**Description**
Gets It	G	Has an understanding of the skill
Knowledgeable	K	Is knowledgeable about the skill. A specialise / raven based on effort (Cognitive).
Natural	N	Is natural at this skill with little cognitive effort. (Limbic)

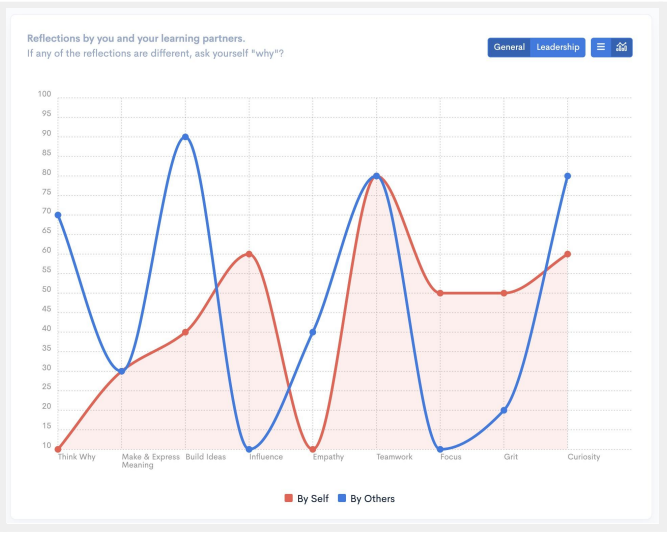
Learner Check-Ins

To help with tracking learner growth and accountability to themselves and their learning community a learner can create a periodic check-in.

The check-in:

- Is at a particular date
- Has a team i.e. the learner and their learning partners - all or a select group.
- Collates reflections by the learner and their learning partners based on the learning community attributes, i.e. focus, grit
- Highlights differences between the learner's reflections and their learning partners and invites them to ask "why"?
- Allows for notes on next learning i.e. plan for learning
- Can be finalised so it is a snapshot for that moment in time.
- Can be downloaded as a PDF.
- The check-ins are a key input into the next steps to show growth and eventing of self-driven learning.
- Community tokens can be created based on check-ins





Learner Next Steps

The *selfdrivenOS* helps learners with their next steps in learning - within their current community and also as a path to their next learning community.

The collection of activity (“check-ins”), including reflection by-self and learning partners, forms a key part of helping learners with their understanding-of-self and next step/pathway decisions - including learning recommendations. Learning partners can summarise learner activity and attributes as an selfdriven Next-Steps (SDN) token based on their specific needs.

Learner activity can be shared as:

- Summarised PDF (for downloading and sharing), including check-ins.
- Sharing within *selfdriven.cloud*
- Sharing with learning partners via the selfdriven API (https://api.selfdriven.cloud) or via exports to CSV or JSON.
- Via the Cardano blockchain (*selfdrivenOS* initiated or other)

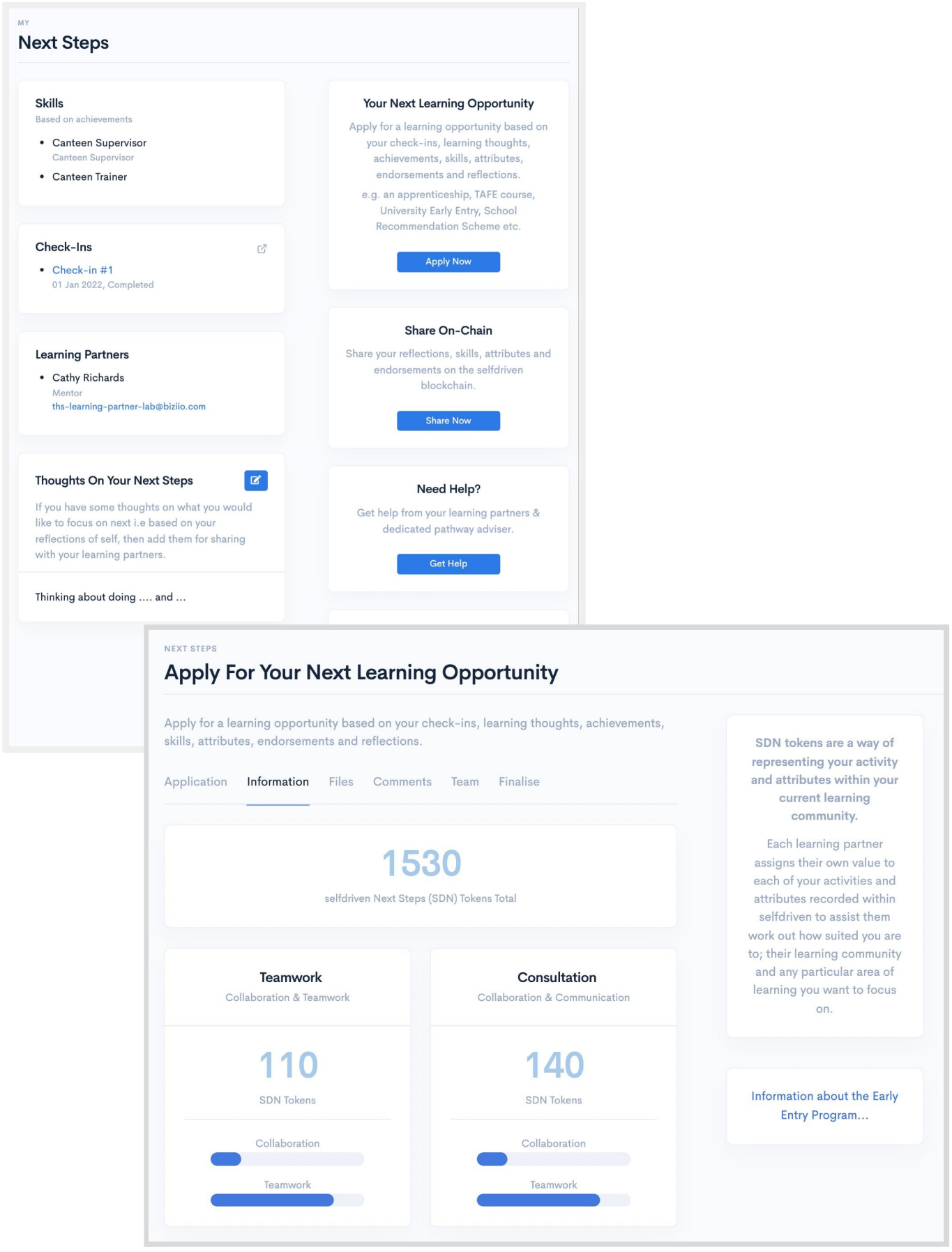
The *selfdrivenOS* includes a blockchain based tokens for sharing:

	**Identity** `SDi` i.e. Learner, community, skills, attributes
	**Endorsements** `SDE`
	**Reflections** `SDR`
	**Achievements** `SDA` i.e. skills, course completions, credentials etc

The blockchain (token-transaction-data/payload) is **compatible with open standards** e.g. *OpenBadge*.

Each user (learner/learning-partner) of *selfdriven.cloud* can **opt-in to have an identity on the blockchain** (SDi) in the form of a shareable public address. All their `SD_` based transactions are linked to this identity.

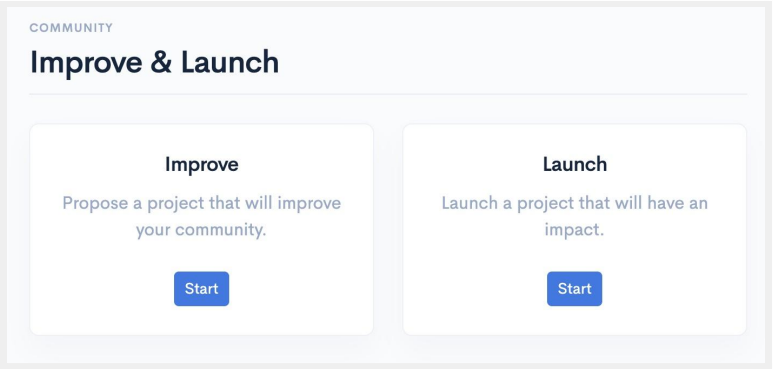
Learners can add **thoughts on their next steps**; helping learning partners facilitate appropriate support, resources & recommendations.


MY
Next Steps
Skills
Based on achievements
Canteen Supervisor
Canteen Supervisor
Canteen Trainer
Check-Ins
Check-in #1
01 Jan 2022, Completed
Learning Partners
Cathy Richards
Mentor
ths-learning-partner-lab@biziio.com
Thoughts On Your Next Steps
If you have some thoughts on what you would like to focus on next i.e based on your reflections of self, then add them for sharing with your learning partners.
Thinking about doing .... and ...
Your Next Learning Opportunity
Apply for a learning opportunity based on your check-ins, learning thoughts, achievements, skills, attributes, endorsements and reflections.
e.g. an apprenticeship, TAFE course, University Early Entry, School Recommendation Scheme etc.
Apply Now
Share On-Chain
Share your reflections, skills, attributes and endorsements on the selfdriven blockchain.
Share Now
Need Help?
Get help from your learning partners & dedicated pathway adviser.
Get Help
NEXT STEPS
Apply For Your Next Learning Opportunity
Apply for a learning opportunity based on your check-ins, learning thoughts, achievements, skills, attributes, endorsements and reflections.
Application
Information
Files
Comments
Team
Finalise
1530
selfdriven Next Steps (SDN) Tokens Total
Teamwork
Collaboration & Teamwork
110
SDN Tokens
Collaboration
Teamwork
Consultation
Collaboration & Communication
140
SDN Tokens
Collaboration
Teamwork
SDN tokens are a way of representing your activity and attributes within your current learning community.
Each learning partner assigns their own value to each of your activities and attributes recorded within selfdriven to assist them work out how suited you are to; their learning community and any particular area of learning you want to focus on.
Information about the Early Entry Program...

Improve & Launch

A place for a community to:

- Propose projects that improve the members community (Improve),
- Launch a project to help another community (Launchpad)



selfdriven Launch allows a community member to build a team, raise awareness, funding & have it voted on.

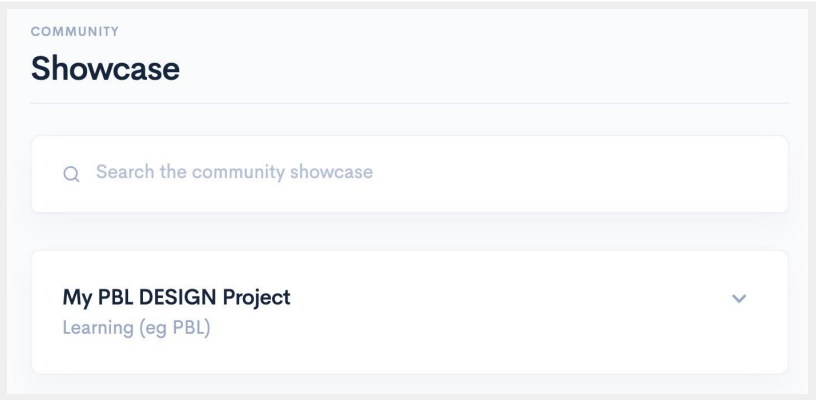
It also includes integration with Cardano blockchain launchpads for startup assistance and funding like cardashift.com.

Showcase

The sense of a community comes from sharing community member outcomes e.g. art works, industrial art projects etc

The showcase also creates a learner focal point. e.g. preparing an artwork for the annual community showcase - adding to a sense of community and purpose.

The integrated community showcase allows a community member to request to have their project shown.



It also includes integration into the selfdriven Exchange to allow learners to:

- exchange outcomes i.e. an industrial arts work or an artwork as an NFT for community tokens,
- Sell to the community
- Trade on open NFT marketplaces like CNFT.io or jpg.store.

If the outcome is an NFT artwork then it can be staked to the selfdriven Exchange for use as a selfdriven Reward for community recognition.

The language

Definitions within the self-driven learning framework.

Learner	Most commonly students, but can be anyone at any time.
Learning Partner	Most commonly professional learning facilitators (teachers etc), but can be anyone who supports a learner, for example the school principal or other learner; Types: ● Specialist facilitators ● Carers ● Learning Support ● Accountability
Learning Sessions	Most commonly a time-tabled learning event ("class"), but may also be an authentic activity that the learner is authorised to participate in - eg a community improvement project).
Learning Spaces	Most commonly a "classroom", but can be any space where learning occurs i.e. at a community learning hub ("School"), home, local park ... Spaces can be general, specialist, active or facilitator spaces. (See definitions below); Types: ● General - used for any type of learning. ● Specialist ● Active ● Facilitator General Space Sizes: ● Micro ("Personal") - approx 1 to 2 people (ie at home) ● Small - approx 10 people ● Medium - 30 people ● Large - 50 to 100 people (eg a common room) ● Very Large - 800 people (eg a hall/MPC)
Professional Learning Facilitator	Qualified teacher etc.
Framework	The structure for supporting activities within the learning collective/community.
Growth Recognition	Process of acknowledging and communicating learner growth (eg learner-led conferences, journals, assessments etc)

Learning Celebrations	Learner-focused events such as "Presentation Night" and "Year 12 Graduation" that celebrate learning in the community, and recognise the support of learning partners
Member of the Community	Learners (students), learning partners (professional learning facilitators/teachers, parents), support (staff, P&C, contractors), THS Community facilitators (principals, directors).
Shared Understanding	Use of information services to transfer state of learning/growth - allowing for more creative collective meetings
Structured Thinking	Context leading to value and the use of languages to make sense of ourselves and the world around us; ie English, Mathematics, Science, HSIE, PDHPE, Music ....
Authentic Experiences	Purpose creating, why?
Reflection	Understanding self and way of thinking (critical reflection), ethics, harm-reduction, growth ...
Environment	Learning spaces, food, water, warmth, clothing, sustainability (resources on Earth are limited)
Accountability	As a citizen of the state, to the THS community & to self.
Growth Recognition	As individuals and as a collective - periodic student driven sync with learning partners (facilitators) (professional & other ie parents).
App	Online (and offline) secure space to reflect, communicate and share.

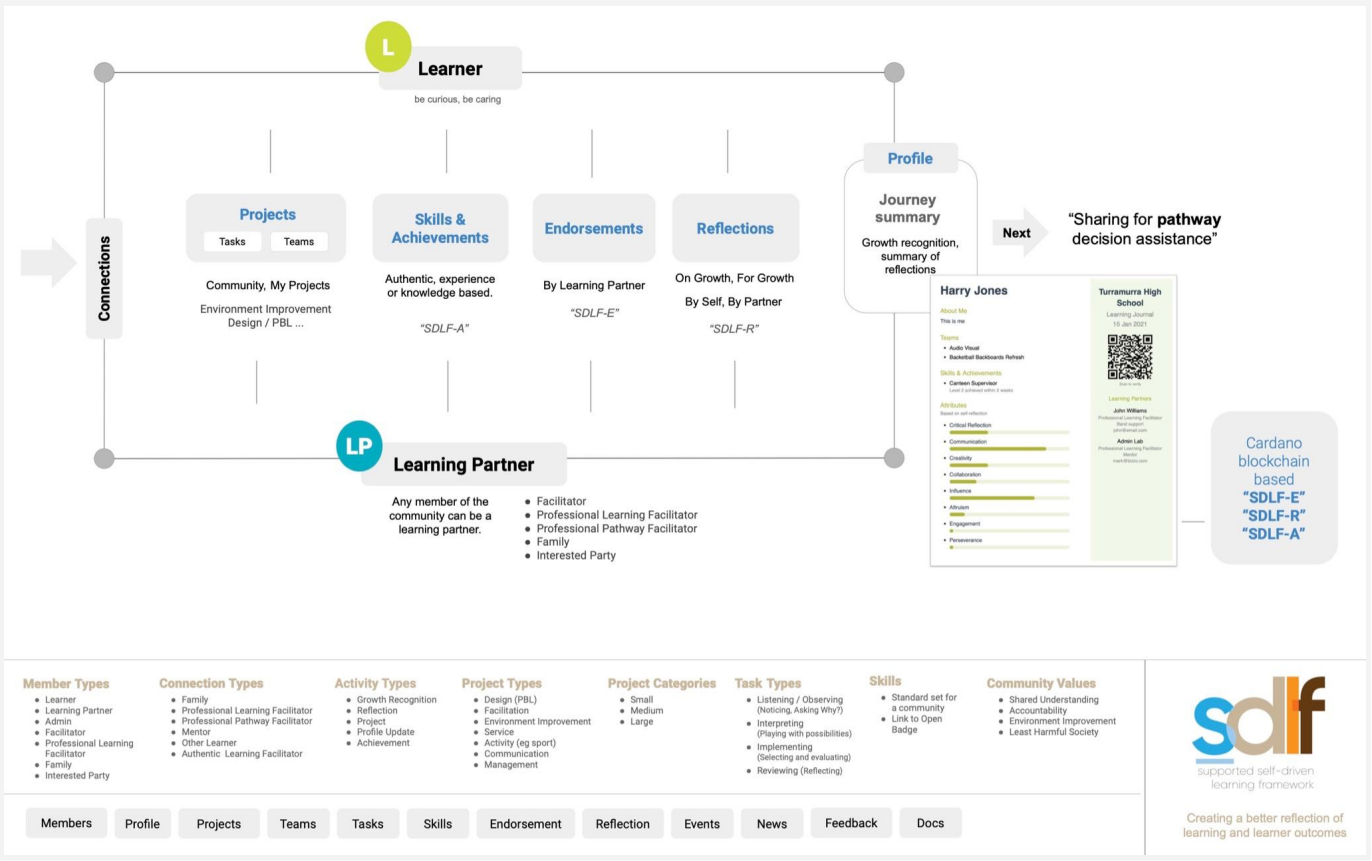
The cloud service

The cloud service (selfdriven.cloud) supports the learning framework and operating system. It is based on entityOS.cloud.

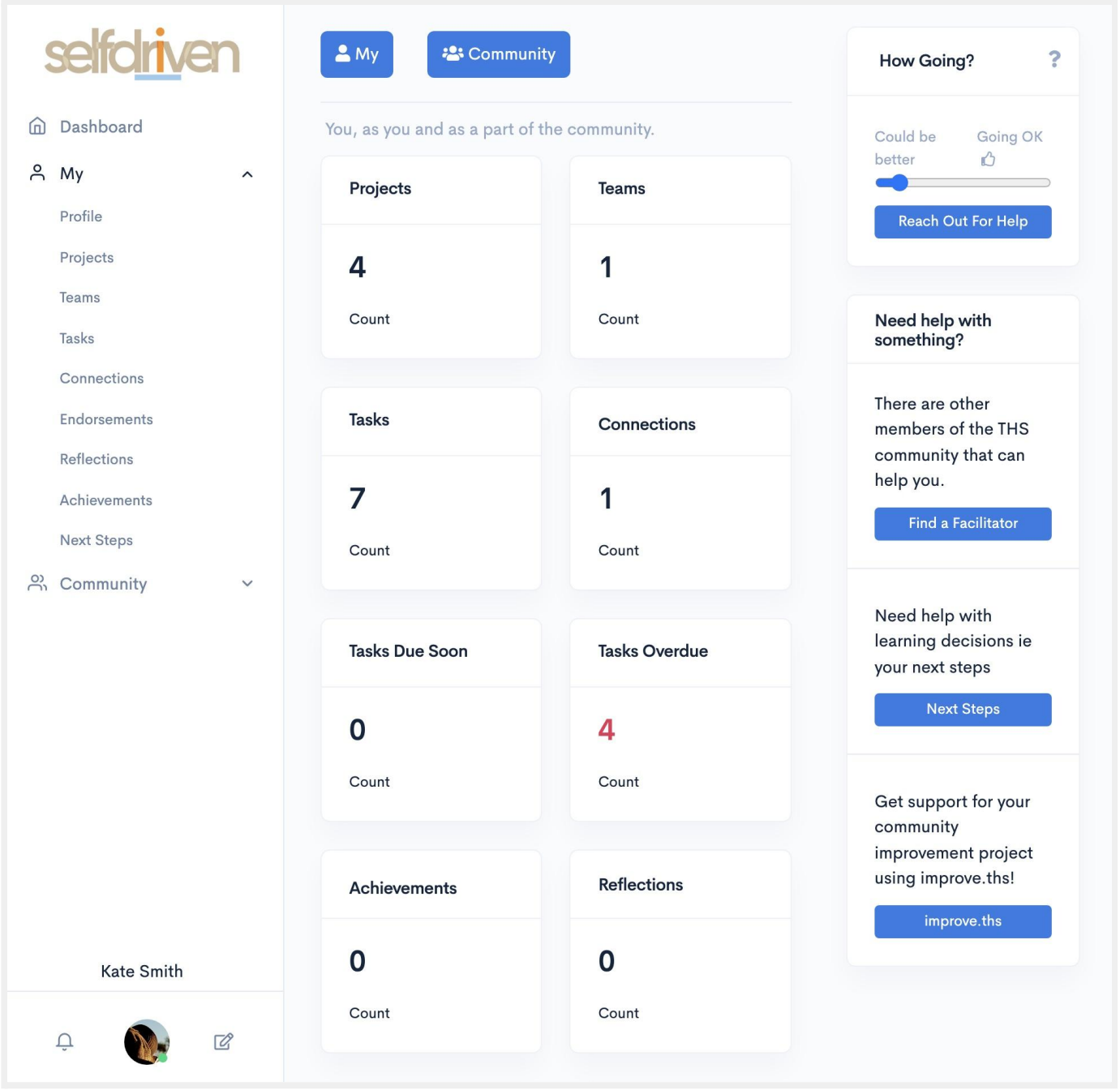
The cloud service includes integration with the *Cardano* blockchain for *tokenising* of learner achievements as *shareable assets* and for internal learning community values.

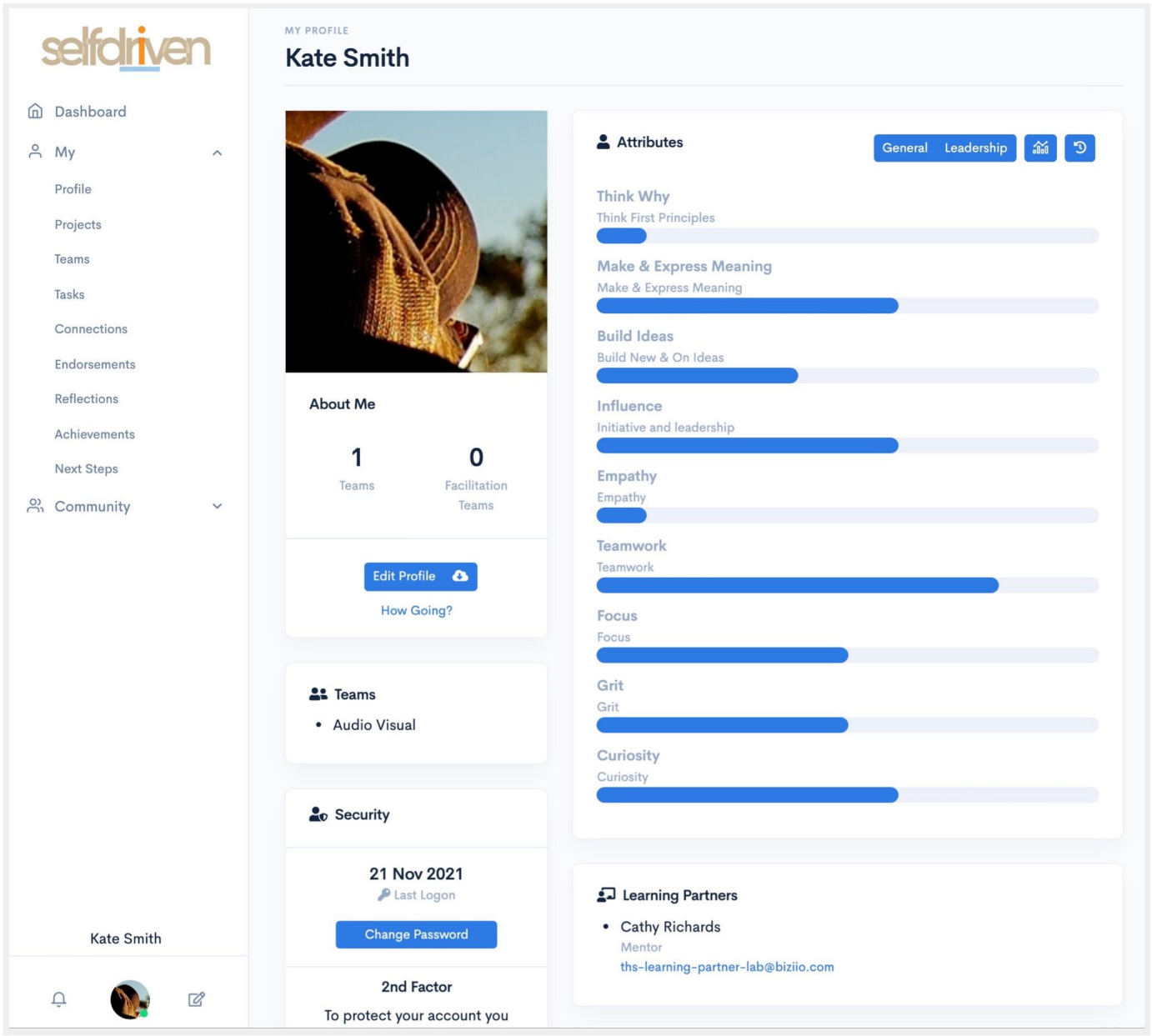
The *selfdriven.cloud* app is centered around the learner to:

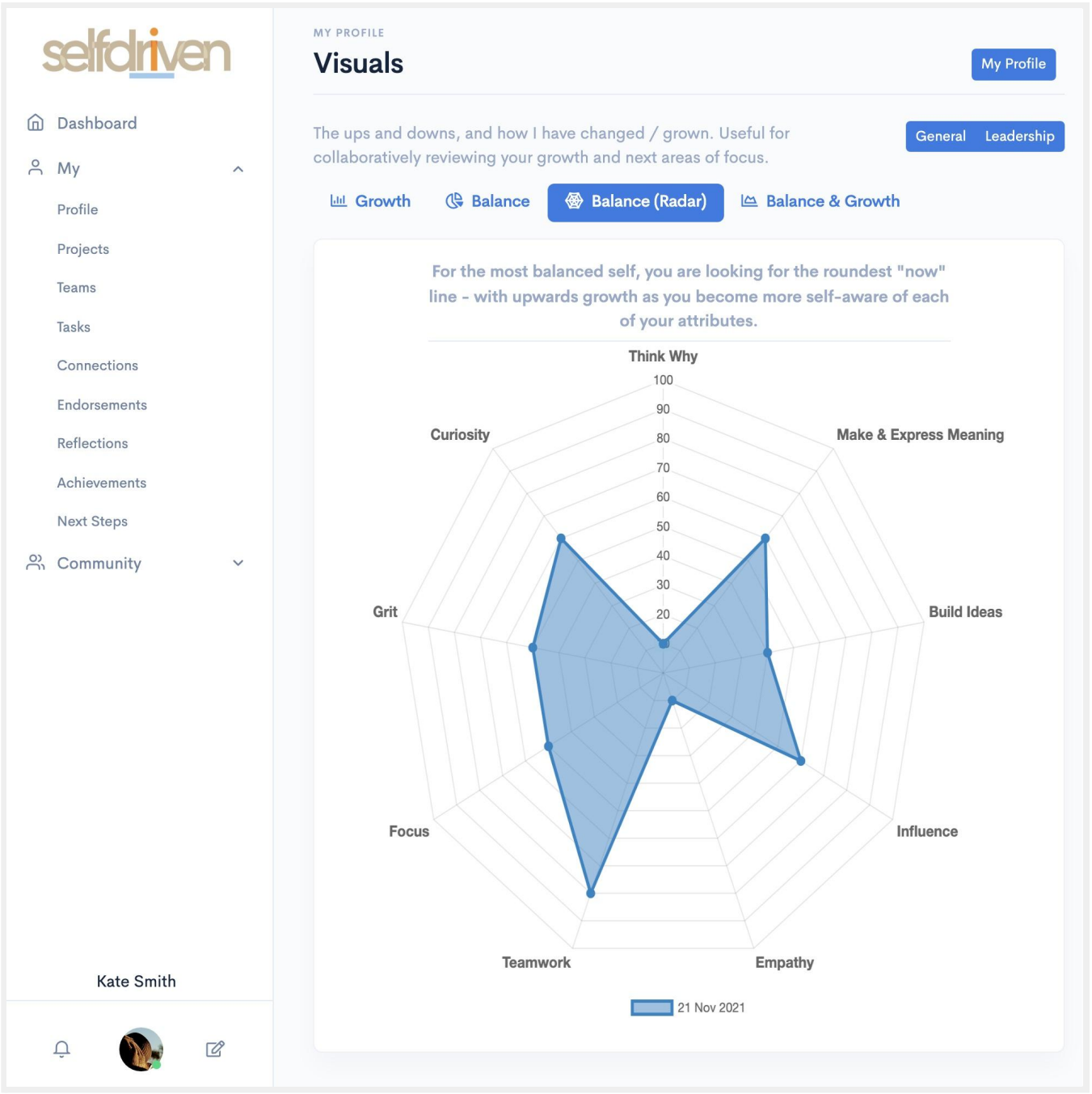
- Capture their learning activity, endorsements, achievements, reflections etc.
- Help them with project-based activities and working in teams, sharing tasks etc.
- Collaborate with learning partners including professional learning facilitators, parents etc.
- Make decisions about their next learning steps; within their current learning environment or as a pathway to other learning environments.



User Experience



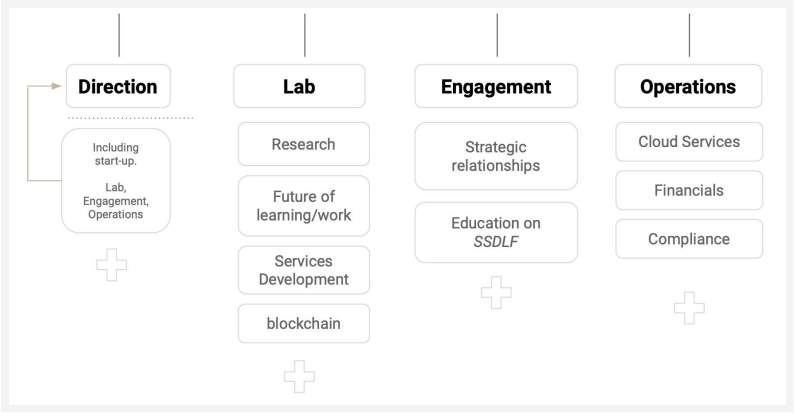

selfdriven
Dashboard
My
Profile
Projects
Teams
Tasks
Connections
Endorsements
Reflections
Achievements
Next Steps
Community
Kate Smith
MY PROFILE
Kate Smith
About Me
1
Teams
0
Facilitation Teams
Edit Profile
How Going?
Teams
Audio Visual
Security
21 Nov 2021
Last Logon
Change Password
2nd Factor
To protect your account you
Attributes
General
Leadership
Think Why
Think First Principles
Make & Express Meaning
Make & Express Meaning
Build Ideas
Build New & On Ideas
Influence
Initiative and leadership
Empathy
Empathy
Teamwork
Teamwork
Focus
Focus
Grit
Grit
Curiosity
Curiosity
Learning Partners
Cathy Richards
Mentor
ths-learning-partner-lab@biziio.com


selfdriven
Dashboard
My
Profile
Projects
Teams
Tasks
Connections
Endorsements
Reflections
Achievements
Next Steps
Community
Kate Smith
MY PROFILE
Visuals
My Profile
The ups and downs, and how I have changed / grown. Useful for collaboratively reviewing your growth and next areas of focus.
General
Leadership
Growth
Balance
Balance (Radar)
Balance & Growth
For the most balanced self, you are looking for the roundest "now" line - with upwards growth as you become more self-aware of each of your attributes.
Think Why
Make & Express Meaning
Build Ideas
Influence
Empathy
Teamwork
Focus
Grit
Curiosity
100
90
80
70
60
50
40
30
20
21 Nov 2021

The Organisation

The Operating System (*selfdrivenOS*) is supported by an organisation that includes:

- **Direction;**
  Organisation directing setting; short & long term areas of focus
- **Engagement;**
  With learning environments
- **Lab;**
  Research and development, based on work by engagement and direction teams
- **Operations;**
  Monitoring and caring for the cloud service (based on *entityOS.cloud*)



Risks

Standard start up and operational risks exist.

Specific risks to selfdriven;

Organisational Source Direction, lab, engagement & operations	**Operating System Component** Cloud service, framework	**Risk** The risk that needs treatment	**Treatment ie control**
Direction	Framework	Not enough experienced people	Work to find people with a broad set of experiences and build into the organisational equity / tokenisation.
Lab	Cloud Service	Development	Focus on User Experience as “backend” is by entityOS.cloud - minimising resource requirements.
Operations	Cloud Service	Hosting	Use entityOS - 21+ years of service.
All	Cloud Service	Information Security	ISMS - based on entityOS - use ISO27001/17. Privacy. Handling of welfare of learners / users.

Funding

Funding of *selfdrivenOS* during startup and ongoing.

Organisational Phase Startup, ongoing	**Type** Equity/Utility	**Funding**	**Value**
Startup	Utility	Self-funding	By founding members
Startup	Equity	Tokenisation	Mint 200,000 *SDF* tokens initial; - Dropped to the founding members; 100,000 - 100,000 available for earning & purchase - 1 hour = 100 tokens
Startup	Utility	Cloud service - entityOS	ibCom (owner of entityOS) to support the use of entityOS.cloud for development at no charge and piloting.
Ongoing	Utility	Operations (Incoming)	Based on subscription to cloud service and professional support services.
Ongoing	Utility	People (Outgoing)	Based on available funding from Operations (Incoming) funds and purchases of tokens.

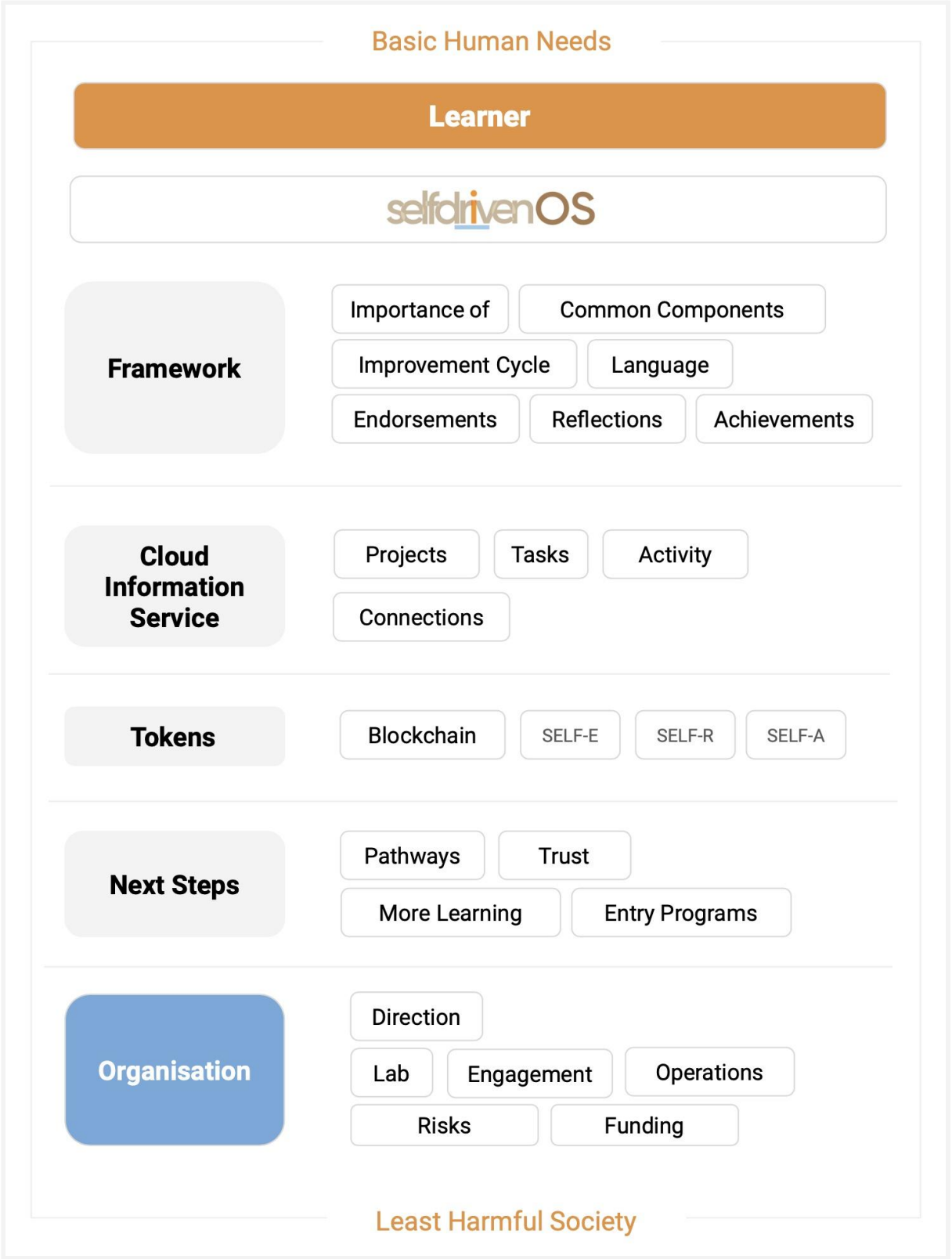
Ownership

Unless otherwise stated related intellectual property is owned by *selfdriven Pty Ltd*.

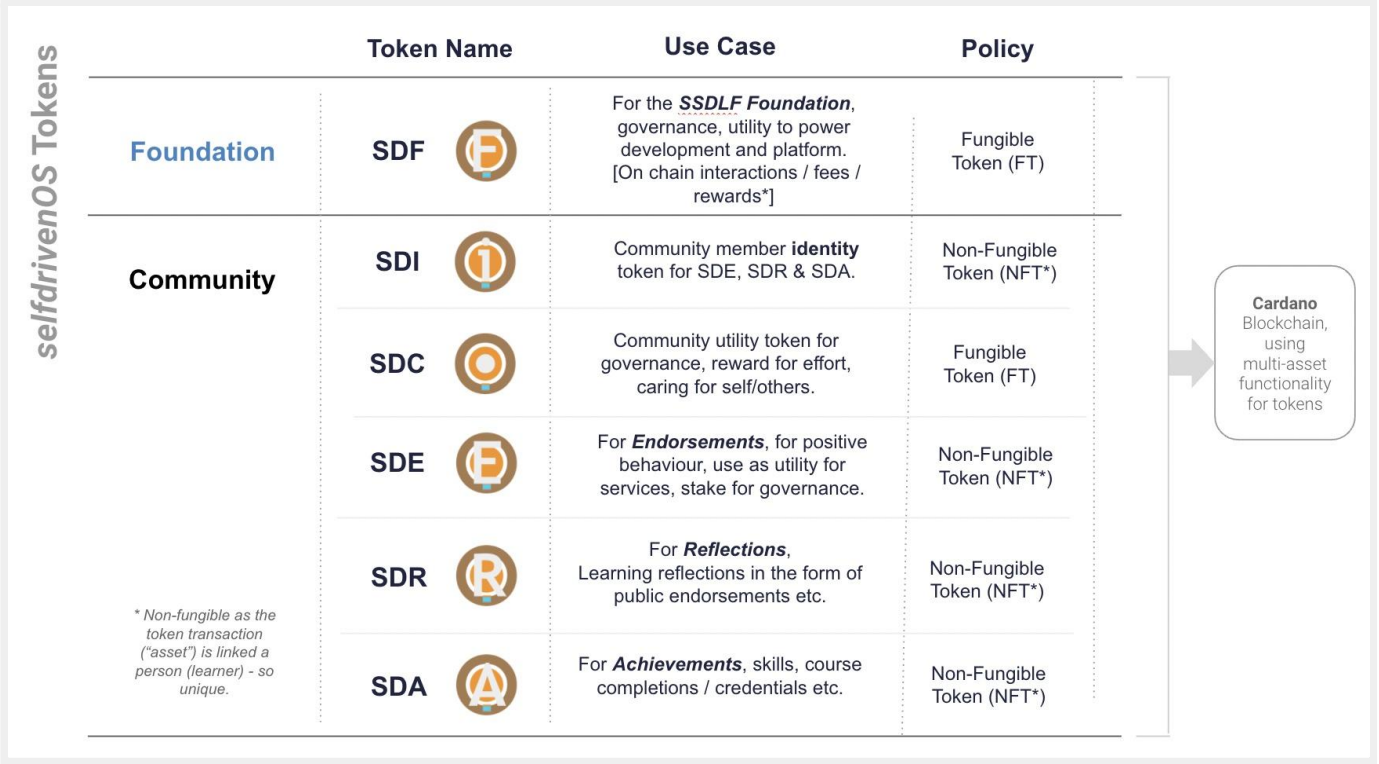
Appendix

- Overview
- Tokens
- Cloud Service; Common Attributes

Overview


Basic Human Needs
Learner
selfdrivenOS
Framework
Importance of
Common Components
Improvement Cycle
Language
Endorsements
Reflections
Achievements
Cloud Information Service
Projects
Tasks
Activity
Connections
Tokens
Blockchain
SELF-E
SELF-R
SELF-A
Next Steps
Pathways
Trust
More Learning
Entry Programs
Organisation
Direction
Lab
Engagement
Operations
Risks
Funding
Least Harmful Society

Tokens



Metadata

Token transactions include metadata that links the transaction back to the selfdrivenOS data i.e. and achievement linked to skills.

selfdriven has a number of meta-data formats based on the token type, with each being uniquely identified by a *Metadata ID (ASCII representation of the token name)*.

Token Name	Metadata ID	Notes
SDF	115100102	Foundation
SDC	11510099	Community
SDI	115100105	Identity (Community Members, Community Organisation, Skill)
SDA	11510097	Achievement
SDR	115100114	Reflection
SDE	115100101	Endorsement

Examples

Token Name	Policy ID	Metadata
SDI (lab)	92be578d1c063b70edf9b2ca0b53c7a58142b65eba43a5b55bdd6cb7 View on cardanoscan	 https://www.selfdriven.foundation/selfdriven-metadata-example-sdi.json
SDA (lab)	96dd4df64ec0857af3a90ebdb5d3318fbef6774fe8c4b50e090af1c6 View on cardanoscan	 https://www.selfdriven.foundation/selfdriven-metadata-example-sda.json

Cloud Service; Common Attributes

Member Types	Community member types: ● Learner ● Learning Partner ● Admin ● Facilitator ● Professional Learning Facilitator ● Family ● Interested Other
Connection Types	● Family ● Professional Learning Facilitator ● Professional Next Steps (Pathway) Facilitator ● Mentor ● Other Learner ● Authentic Learning Facilitator
Activity Types	● Growth Recognition ● Reflection ● Project ● Profile Update ● Achievement
Project Types	● Design (Project Based Learning) / My Project) ● Facilitation ● Environment Improvement ● Service ● Activity (ie Sport, Dance) ● Communication ● Management
Project Categories	● Small ● Medium ● Large
Task Types	Relating to the improvement cycle: ● Listening / Observing ● Interpreting ● Implementing ● Reviewing

Skills	Type of achievement: ● Standard set for a community ● Linked to tokens
Community Values	● Shared Understanding ● Accountability ● Environment ● Least Harmful Society ● Sense of self / Caring for others