



The Co-Innovation Space Hub

Space Finance & Insurance HUB (SFIH)

Final Report

19<sup>th</sup> of July 2023

ESA Contract No. 4000137318/22/NL/GLC/ov

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## Introduction

In a presentation<sup>1</sup> done by Frank M. Salzgeber<sup>2</sup> at the 2<sup>nd</sup> Workshop on Access to Finance for Space Industry in Brussels on the 3rd of May 2016, Space Community was compared to the Addams Family for the non-space communities: very well and nice together but not realizing that everybody else is afraid of them!



7 years after, the situation is improving but finance community is still afraid by... the (Space) Addams Family despite numerous initiatives supported by ESA and EC in the past years.

Space Cooperative Europe SCE (Germany) with Startin'blox (France) and stakeholders from the finance & (re)insurance community, academia, policymakers and industry joined forces for reducing the information gap and developing an Ecosystem supporting innovative solutions for the Space sector:

- to bring more transparency to this market
- to increase the visibility of the Space-related activities
- to share information about the role of each actor (who is doing what? EC, ESA, EIB, etc...)
- to build a stronger network between SMEs, insurers and investors
- to support deal flow

As recalled by ESA during the Negotiation Meeting #1 held on the 21<sup>st</sup> of January 2022:

- SFIH is a study
- ESA is not purchasing a technical platform
- the main and mandatory deliverable of SFIH should be a Final Report which should describe how SFIH platform could provide added value to ESA, its Member States and all stakeholders involved in SFIH

That is the rationale of this Final Report.

<sup>1</sup> See page 15/29 of <https://ec.europa.eu/docsroom/documents/16672>

<sup>2</sup> At that time Frank Salzgeber was working for the Technology Transfer Office at ESA  
<https://www.linkedin.com/in/frank-salzgeber/>

## Overview

This virtual community and knowledge base, dedicated to Financing & (re)Insuring Space-related activities, started as an idea submitted in December 2020 to ESA through Open Space Innovation Platform (OSIP)<sup>3</sup>.

It was selected by ESA, in relation to the “Permanently Open Announcement of Opportunity” of the Discovery Element, in 2021 and transformed into a Space Finance & Insurance HUB (SFIH) study full proposal sent to ESA through ESA-Star on the 20<sup>th</sup> of September 2021.

ESA selected SFIH study and informed SCE2 on the 10<sup>th</sup> of January 2022.

Then two negotiation meetings between ESA and Space Cooperative Europe SCE were held remotely on the 21<sup>st</sup> of January 2022 and on the 28<sup>th</sup> of January 2022.

SFIH study was kicked-off remotely on the 16th of Feb. 2022 with ESA.

In March 2022, Startin'Blox deployed the initial version of the technical platform “as existing” then started the user requirements and UX research for the next version.

At the SFIH Advisory Board Meeting #2 held on the 24<sup>th</sup> of June 2022, it was announced that SFIH is still the project name but the external offering will be "Space Linkers" with a dedicated logo designed by Susanna Agulló i Giné<sup>4</sup> and selected by the SFIH Advisory Board members.



**Space Linkers**

Space Finance & Insurance Hub



[www.spacelinkers.finance](http://www.spacelinkers.finance)



[contact@spacelinkers.finance](mailto:contact@spacelinkers.finance)

A flyer was distributed for the first time on the 29<sup>th</sup> of June 2022 at the networking cocktail of the event “Backing the stars of Europe: new horizons for private investment funds” (29-30 June 2022, Paris – France)<sup>5</sup>.

Space Cooperative Europe SCE launched end of June 2022 the technical platform <https://spacelinkers.finance/> and presented it to ESA Technical Officer on 1<sup>st</sup> of July 2022 at the SFIH Progress Meeting #2.

The final review of SFIH occurred one year after, on the 19<sup>th</sup> of July 2023.

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<sup>3</sup>

<https://ideas.esa.int/servlet/hype/IMT?documentTableId=45087631478687244&userAction=Browse&templateName=&documentId=b11149d1809f124c448dbfa38bb05a91>

<sup>4</sup> <https://www.behance.net/susannaagullo>

<sup>5</sup> <https://engage.eif.org/investing-in-eu-space/2022-event>

## Building an Ecosystem

In this activity, we developed an Ecosystem related to Finance and Insurance supporting innovative solutions for the Space sector. We worked on several threads in parallel:

- Advisory Board
- Community Platform
- Community Management
- Outreach
- Business Models

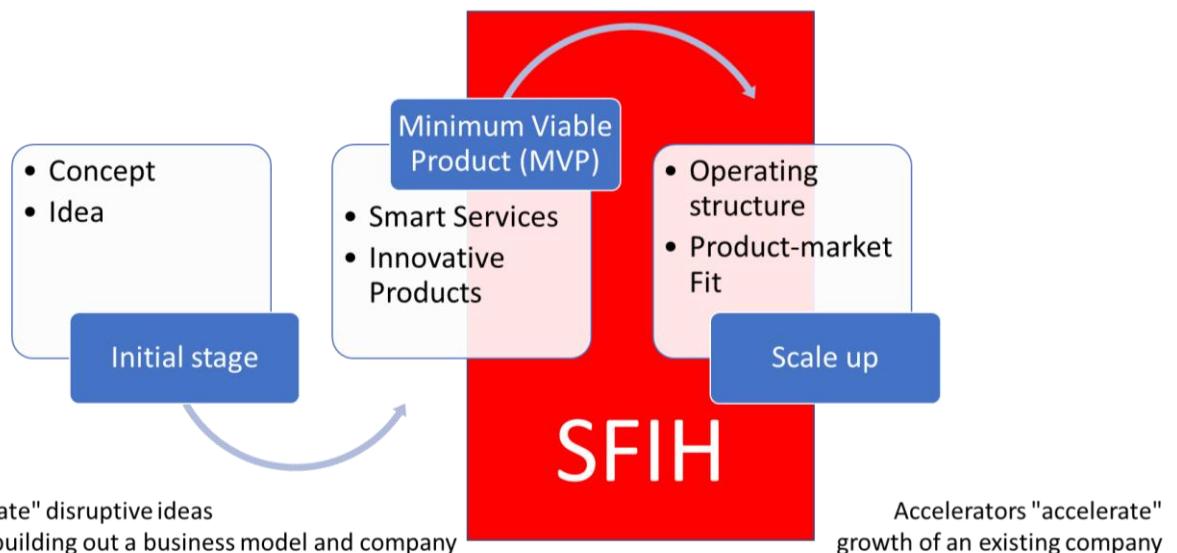
We started this activity from scratch in February 2022.

18 months after, thanks to the work done during this activity, we have built an Ecosystem having:

- an Advisory Board of 23 members representing the whole value chain
- a Community Platform of 84 members
- contacted more than 400 stakeholders across 20+ events, mostly on-site
- a clear idea of the business model to apply in the future

### Value chain

For this activity, in order to be as impactful as possible, we made a conscious decision to focus on existing private companies, already incorporated and having one or several years of operation, having already a Minimum Viable Product (MVP) and willing to scale.



Lots of technology innovation already occurred in the space domain in Europe the past years which is great but not enough. It is time now to stimulate and enable creativity and innovation in financing, insuring and reinsuring space-related activities.

Such a very specific domain is key for the competitiveness of the European space industry however right now, it is extremely fragmented and the communities, space on one side, finance and insurance on the other side are evolving in 2 very different worlds.

Setting up a dedicated Hub for bridging the knowledge and information gap between these communities is of the utmost importance in order to learn and develop innovative financing & (re)insuring solutions for the space sector in Europe, including reinsurance, given the uncertainty surrounding satellite projects and its related insurance costs.

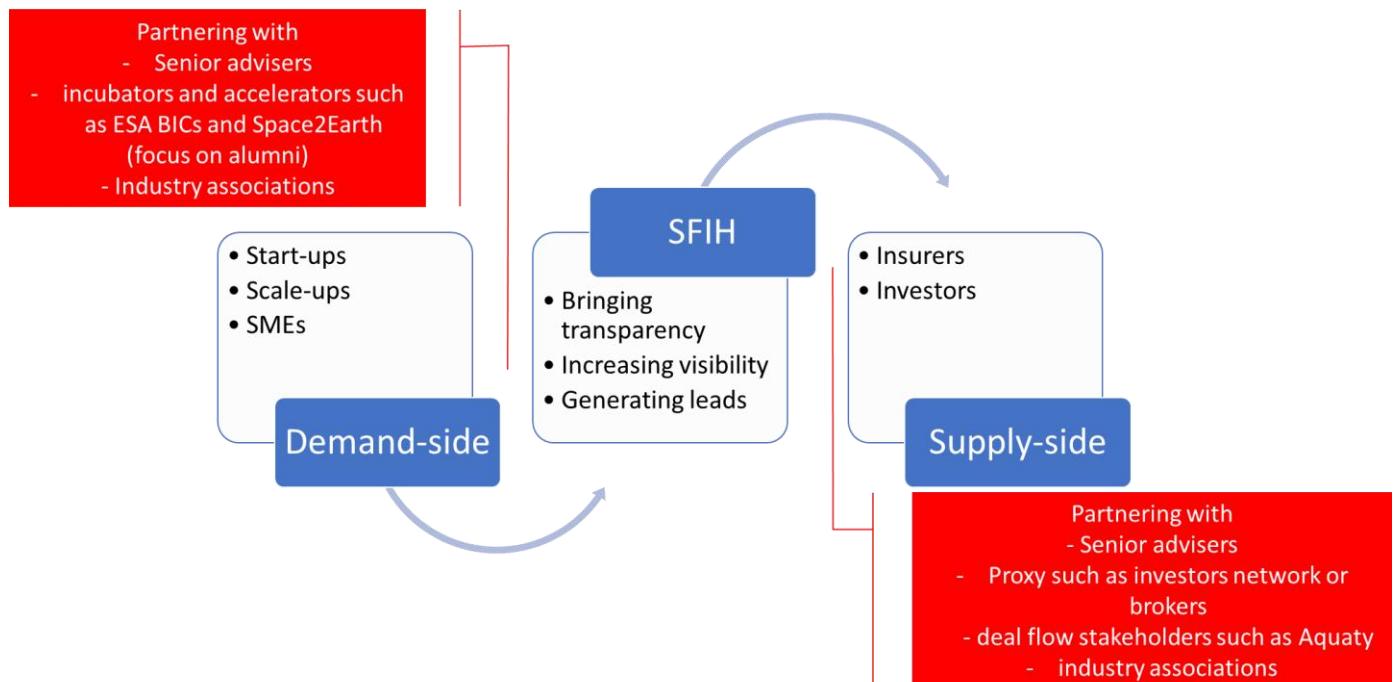
Being a very motivated but small team, we decided to leverage all the relevant existing entities helping us:

- on-boarding entities (Start-ups, Scale-ups, SMEs) on the demand side
- accessing to insurers and investors on the supply-side

We are calling them “proxy”, as described in the figure below in the red blocs and includes:

- Senior advisers
- incubators and accelerators (focus on alumni) such as ESA BICs and Space2Earth
- Industry associations, for instance EARSC - European Association of Remote Sensing Companies
- investors network or brokers, for instance EBAN - European Business Angels Network
- deal flow stakeholders such as Aquaty

The rationale of SFIH is that whatever role a stakeholder has in the value chain, SFIH should bring benefit(s) to this stakeholder so it is all about aligning interests among the various stakeholders.



## Stakeholders

As stated by ESA<sup>6</sup>, "space is evolving from being the preserve of the governments of a few spacefaring nations to a situation in which there is the increased number of diverse space actors around the world, including the emergence of private companies, participation with academia, industry and citizens, digitalisation and global interaction" so it was important for SFIH to contact, connect, inform, and develop links with very different stakeholders.

### Small and medium-sized enterprises (SMEs)

Small and medium-sized enterprises (SMEs) are defined in the EU recommendation 2003/361<sup>7</sup>. The main factors determining whether an enterprise is an SME are

- **staff headcount**
- either **turnover** or **balance sheet total**

Company category	Staff headcount	Turnover
Medium-sized	< 250	≤ € 50 m
Small	< 50	≤ € 10 m
Micro	< 10	≤ € 2 m

Most of the companies we interacted with are Micro entities and a couple of Small entities as well.

Micro are looking for pre-seed (below 1M€ - examples being CarbonEye, based in Estonia and Pixstart, based in France) or seed funding (below 10M€) while Small are looking for funding round above 10M€ such as Pangea Aerospace, based in Spain and France.

### Large companies

During the activity, we interacted from time to time with Large System Integrators (LSIs)<sup>8</sup> such as Airbus Defence and Space and OHB System but mainly through their Corporate Venture capital (CVC), a specific subset of venture capital i.e. investment of corporate funds directly in external startup companies. CVC is defined as the "practice where a large firm takes an equity stake in a small but innovative or specialist firm, to which it may also provide management and marketing expertise; the objective is to gain a specific competitive advantage."<sup>9</sup>

Examples of space-related CVC are

- Airbus Ventures<sup>10</sup> which is investing in innovative aerospace start-ups such as Astroc (CH)<sup>11</sup>
- OHB Venture Capital<sup>12</sup> which invests worldwide in cutting-edge space technology related start-ups such as constellr (DE)<sup>13</sup>
- Safran Corporate Ventures (SVC)<sup>14</sup> which is a Strategic investor in innovative startups such as Vyoma (DE)<sup>15</sup>

<sup>6</sup> [https://www.esa.int/About\\_Us/Ministerial\\_Council\\_2016/What\\_is\\_space\\_4.0](https://www.esa.int/About_Us/Ministerial_Council_2016/What_is_space_4.0)

<sup>7</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32003H0361>

<sup>8</sup> [https://www.esa.int/About\\_Us/Business\\_with\\_ESA/Large\\_System\\_Integrators](https://www.esa.int/About_Us/Business_with_ESA/Large_System_Integrators)

<sup>9</sup> [https://en.wikipedia.org/wiki/Corporate\\_venture\\_capital](https://en.wikipedia.org/wiki/Corporate_venture_capital)

<sup>10</sup> <https://www.airbusventures.vc/>

<sup>11</sup> <https://www.spaceintelreport.com/astroc-closes-seed-round-4-1-million-investiere-airbus-ventures-investors/>

<sup>12</sup> <https://www.ohb-vc.de/>

<sup>13</sup> <https://www.ohb.de/en/news/ohb-participates-in-latest-funding-round-for-constellr>

<sup>14</sup> <https://www.safran-group.com/group/innovation/safran-corporate-ventures>

<sup>15</sup> <https://www.vyoma.space/press-releases/06/2023/vyoma-tops-up-seed-round-with-safran-corporate-ventures/>

## Investors, financial institutions

In the past 12 months, we met face to face with more than 50 investors, across Europe, interested in space-related start-ups and we invited them to join <https://spacelinkers.finance/> however only a couple of them did.

We had few discussions as well with some banks, related to loan, as

- some space-related activities are capital intensive
- some entities are looking for non-dilutive venture debt, rather than investors

## Insurers

SFIH is including an insurance and reinsurance part for a very simple reason: most of the space-related activities developing and operating hardware are looking for funding at one point and later one insurance when they are launching their space assets. Although the supply-side is different (investors vs insurers), the demand-side is the same.

We interacted with

- AON International Space Brokers (ISB)<sup>16</sup>
- AXA XL<sup>17</sup>
- MunichRe<sup>18</sup>

## International Institutions

Having participated to numerous events related to Space & Finance, organized or supported by international institutions (ESA, EC, EUSPA, EIB, EIF) such as the EUSPA, EC, EIF and ESA Capacity building program for fund managers, we met there relevant public servant stakeholders and promoted extensively to them SFIH Ecosystem and its Community Platform <https://community.spacelinkers.finance/>.

## Service providers

Several service providers understood the relevance of SFIH, including its deal-flow opportunity, and are using it for offering their services and/or solutions to the demand-side, such as

- Aquaty (DE), Europe's Operating System for Venture Capital<sup>19</sup>
- Citicourt & Co Limited (UK), a Corporate Finance firm delivering high quality strategic advice, traditional & strategic finance, M&A & Fundraising<sup>20</sup>
- Evenflow SRL (BE), offering a wide range of services that support actors in the space industry through Scalewise<sup>21</sup> including its space industry-specific company analysis and valuation service<sup>22</sup>

## Advisory Board

In order to have a good understanding of the entire value chain and for making sure we are bringing benefits to each and every stakeholder along it, we contacted beginning of 2022 30+ people and asked them to join the SFIH Advisory Board for bringing their expertise and perspectives and providing non-binding strategic advice to SFIH project.

We made sure to have at least 1 or 2 representative(s) for each type of stakeholder (see details in figure next page).

SFIH Advisory Board is composed of 23 members from 8 different countries (BE, CH, DE, FR, GR, LU, UK, USA) and met 3 times (for 1 or 2 hours long) between April and September 2022 (6 months) as follow:

- 29th of April 2022
- 24th of June 2022
- 23<sup>rd</sup> of September 2022

<sup>16</sup> <https://www.aon.com/industry-expertise/space.jsp>

<sup>17</sup> <https://axaxl.com/insurance/products/space-insurance>

<sup>18</sup> <https://www.munichre.com/en/solutions/for-industry-clients/space-and-satellite-insurance-solutions.html>

<sup>19</sup> <https://www.aquaty.vc/>

<sup>20</sup> <https://www.citicourtandco.com/>

<sup>21</sup> <https://scalewise.space/>

<sup>22</sup> <https://scalewise.space/service/company-analysis-and-valuation/>

Stakeholders										
Demand side		In between parties			Supply side			Experts / Senior Advisors	Country	Name
SMEs	Startups	Incubator / Accelerator	SCE2 + SIB	Investment networks / Insurance Borkers	Service providers	Investors	Insurers			
1									FR	GlobeEye (FR)
								1	FR	Anabelle OLIVEIRA
				1					FR	SID Network (via Nicolas KULAKOWSKI)
					1				DE	AQUATY.VC
				1					LU	EBAN Space
1									FR	OKP4 (FR)
1									CH	Picterra (CH)
								1	FR	François MARCHESSAUX
		1							CH	Space2Earth Accelerator (CH)
	1								FR	Pixstart (FR)
					1				DE	OHB Venture Capital (via Egbert Jan van der Veen)
								1	UK	Ehsan RAZAVIZADEH
		1							DE	Markus HÄUSER (SCE2)
								1	BE	Eric POL
								1	GR	Christophe Bosquillon
			1						FR	AON International Space Brokers (ISB)
1									DE	ConstellIR (DE)
								1	GR	Athanasiос Papaioannou
					1				USA	Space Commerce Matters (SCM)
			1						FR	Startin'blox (SIB via Sylvain Le Bon)
							1		FR	AXA XL
									BE	Evenflow (via Lefteris Mamais)
									UK	Citicourt & Co (via Jodi Bartin)
3	2	1	2	3	4	1	1	6	8	

## Work Packages

The activity has 4 Work Packages:

- WP1000: Project Management including liaison with ESA and SFIH Advisory Board
- WP2000: Implementation of the Community Platform including UX, development, test and deployment
- WP3000: Community Management for making sure the Community is lively
- WP4000: Economic sustainability and Business Models (EBM) i.e. making sure SFIH is self-sustainable

## Project Management

The initial planning of the SFIH project, agreed during the contractual negotiations, was according to the SoW i.e. the duration of the work shall not exceed 12 months for Study activities from kick-off to the end of the activity (delivery of the draft Final Report).

Description	Timeline	janv-22	févr-22	mars-22	1	2	3	4	5	6	7	8	9	10	11	12	13
		janv-22	févr-22	mars-22	avr-22	mai-22	juin-22	juil-22	août-22	sept-22	oct-22	nov-22	déc-22	janv-23	dévr-23	mars-23	
Negotiation Meetings	Friday 21st of January 2022	✗															
	Friday 28th of January 2022	✗															
Business Plan		✗															
Contract signature	February 2022		■														
Kick-off (KO) meeting	16th of February 2022		○														
Progress Meetings (PM)	every 2 months				PM#1	PM#2	PM#3 (MTR)	PM#4	PM#5								
Final Presentation (FP)	week 8 (13/02-17/02/2023)														○		
Milestone Payments			▼					▼								▼	
Offset																	
Releases of SFIH Application																	
WP1000 Project Management																	
WP2000 Implementation																	
WP3000 Community Management																	
WP4000 Economic sustainability and Business Models (EBM)																	

If we are considering the Final Presentation date, the duration of the SFIH project was extended by 22 weeks (from week 8 in the initial planning to week 30 in the actual one) so 5.5 months.

Description	Timeline	janv-22	févr-22	mars-22	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
		janv-22	févr-22	mars-22	avr-22	mai-22	juin-22	juil-22	août-22	sept-22	oct-22	nov-22	déc-22	janv-23	dévr-23	mars-23	avr-23	mai-23	juin-23	juil-23	
Negotiation Meetings	Friday 21st of January 2022	✗																			
	Friday 28th of January 2022	✗																			
Business Plan		✗																			
Contract signature	14th of February 2022		○																		
Kick-off (KO) meeting	16th of February 2022		○																		
Progress Meetings (PM)	every 2 months				PM#1	PM#2	PM#3 (MTR)	PM#4	PM#5												
Final Presentation (FP)	week 30 (17/07-21/07/2023)					10 May 2022	1 July 2022		14 October 2022	12 December 2022							2 May 2023			19 July 2023	
Milestone Payments			▼					▼												▼	
																				25%	
Offset																				25%	
Releases of SFIH Application																					
WP1000 Project Management																					
Naming & Branding																					
SFIH Advisory Board																					
WP2000 Implementation																					
Design (features, UX, UI)																					
Custom Development, Test, Deployment																					
WP3000 Community Management																					
WP4000 Economic sustainability and Business Models (EBM)																					

The main changes between the initial planning and the actual are the following:

- We developed and deployed 4 versions of the community platform but the first one (mid-March 2022) was “as existing” and the fourth one (end of July 2023) is “candidate”
- 7 SFIH Advisory Board Meetings were planned at the beginning of the project, we made only 3 meetings of the Advisory Board because we combined some meetings in the first half of the project, and we were not able to make additional meetings since September 2022
- Community Management initially planned from June 2022 to February 2023 was finally made from August 2022 to April 2023

## Community Platform

We design, develop and operate an interoperable and modular application, offered as a Service (SaaS) by Space Cooperative Europe SCE, the first Societas Cooperativa Europaea (SCE) dedicated to Space, based on emerging W3C Solid open specifications<sup>23</sup> implemented in various components by Startin'blox, a French IT cooperative.

Knowledge about financing, insuring and reinsuring space-related activities is distributed among a diversity of autonomous stakeholders. Data silos prevent such knowledge to circulate in a smooth and flexible manner, hereby hampering innovation potentials.

That's why we propose to leverage W3C Solid<sup>24</sup> (derived from "social linked data") which is a proposed set of conventions and tools for building decentralized social applications based on Linked Data principles. Modular and extensible, Solid enables richer choices for people, organizations, and app developers by building on and relying as much as possible on existing web standards and protocols from World Wide Web Consortium (W3C)<sup>25</sup>.

The Community Platform meets the following requirements:

### 1/ Open source

The application being built using Startin'blox open-source technology, ESA may benefit from developments paid by other customers of Startin'blox and ESA understands that the custom development and improvements made during this activity will also be made available to the opensource community.

Startin'blox technology being publicly documented<sup>26</sup>, ESA remains capable to change provider or involve third parties at any time – as long as such decisions don't infringe agreed terms and conditions.

Startin'blox Orbit is an integrated product which includes:

- A server storing user data
- Hosting and maintenance services
- A token account to order technical improvements
- Support and advice from a product owner
- Basic core features (notification, administration, analytics...)

### 2/ Modular

Startin'blox applications are composed of web components, called Blox'. A Blox' offers an integrated feature (e.g. a map, a chat, a directory). Any Blox' can be deployed or removed from any Startin'blox application, without affecting its overall functioning.

For SFIH, 6 Blox' were deployed:

Registration, Directory of members, Directory of Entities, Events, Resources, Chat (one to one and one to many).

One user should start first with registering via <https://spacelinkers.finance/>.

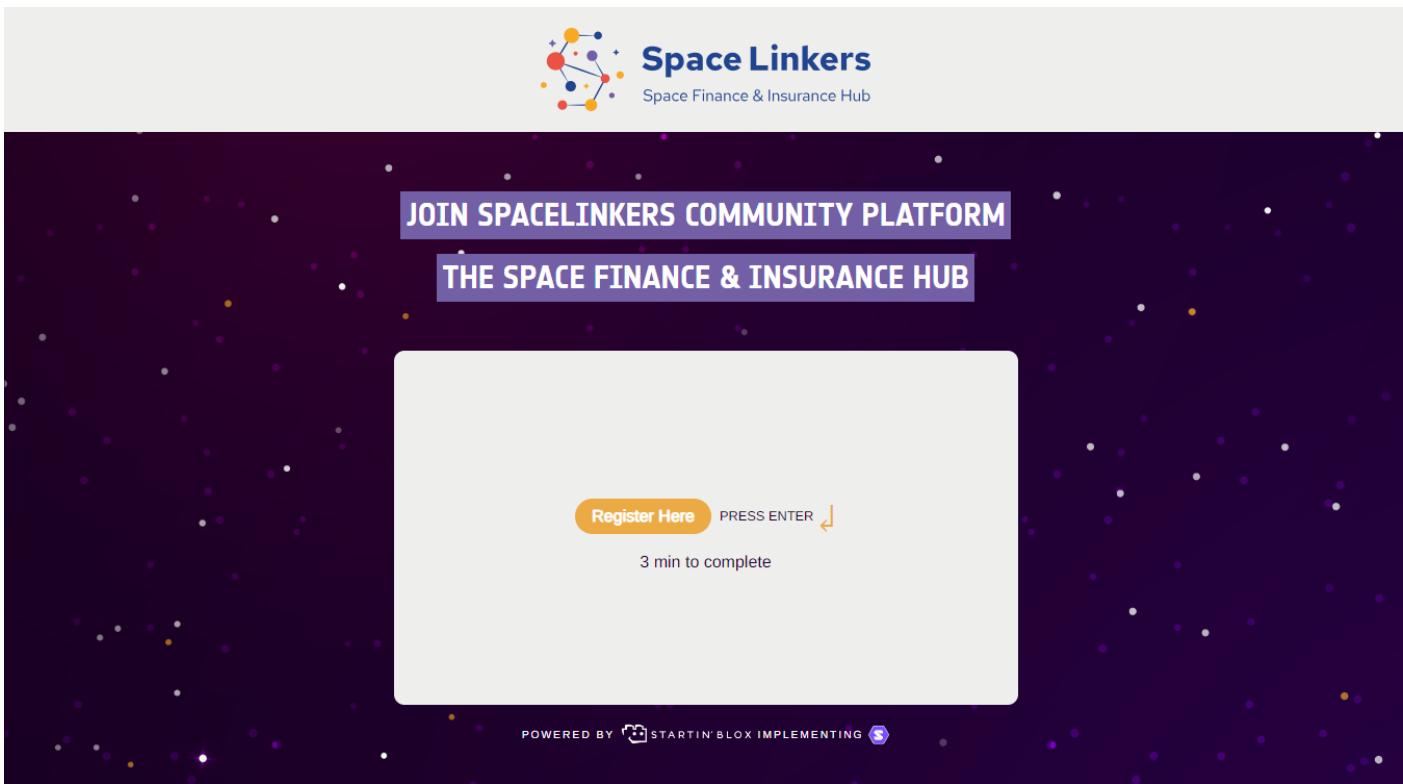
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<sup>23</sup> <https://github.com/solid/specification>

<sup>24</sup> <https://solidproject.org/>

<sup>25</sup> <https://www.w3.org/>

<sup>26</sup> <https://git.startinblox.com/>



Filling in the various questions and approving the Terms & Conditions, a profile will be created and after having defined the required password, the user could access, as natural person, to <https://community.spacelinkers.finance/>.

If several users are part of the same entity (legal person or initiative), one of them could decide to create an entity and this entity will appear in the “Entities Directory”.

NAME	MEMBERS
AQUATY GmbH We bring Venture Capital to the Digital Age.	2 member(s)
CarbonEye Making The Invisible Visible	1 member(s)
Citicourt & Co Limited Mergers & Acquisitions and Fundraising	1 member(s)
ESA SME Office Supporting your business with ESA	1 member(s)

One could create, post and share events and/or resources.

SpaceLinkers Community Platform Beta

POST AN EVENT

**EVENTS**

**Research an event**

Filter by event type

Select a value +

**Past events**



**FT'S INVESTING IN SPACE SUMMIT**  
From 05.06.2023 12:00 To 06.06.2023 18:00



**SPACE4FINANCEFORAGREENTRANSITIC**  
From 16.02.2023 11:00 To 16.02.2023 12:30



**LONDON CGFI INNOVATION HUB LAUNCH EVENT**  
From 28.11.2022 17:00 To 28.11.2022 20:30

SpaceLinkers Community Platform Beta

POST A NEW RESOURCE ADD KEYWORD

**RESOURCES**

**Search resource**

**RESOURCE TYPE** **KEYWORDS** **ASSOCIATED CIRCLE**

Select Value + Select Value + - ▼

**SPACE MARKET ANALYSIS**  
URL

ESPI Reports offer an in-depth perspective and analysis on one specific topic or issue. Written by our Research Fellows, they combine thorough independent analysis with vision in order to formulate policy advice and recommendations

<https://www.espi.or.at>

**EUSPA EO AND GNSS MARKET REPORT**  
URL

GNSS- and EO-enabled revenues crossed €200 billion in 2021, set to reach almost €500 billion over the next decade.

<https://www.euspa.europa.eu>

**EUSPA VENTURE CAPITALIST DATABASE**  
URL

The list of Venture Capitalists (VCs) interested in investing in space is published on the European Agency for the Space Programme (EUSPA) website in the hope that this will make it easier for companies in the downstream space sector to get in touch with investors. If you are a VC and are interested in registering on the database, look at [https://www.euspa.europa.eu/sites/default/files/c\\_venture\\_capitals\\_database.pdf](https://www.euspa.europa.eu/sites/default/files/c_venture_capitals_database.pdf). There is no registration deadline.

<https://www.euspa.europa.eu>

VCs EUSPA Database

Any user could create “Circle” which is a chat feature “one to many”. Such circle could be private (with a locker before its name) or public (with a dash before its name). Any public circle could be joined by any user while a specific user should be invited to join a private circle by its admin.

There are 10 existing circles, 7 public (Capacity Building, Equity, Loan, M&A, Space Insurance, Supporting Services) and 3 private (ESA SFIH, SFIH Internal Team, SpaceLinkers All Members).

SpaceLinkers Community Platform Beta

Search (ctrl+k) Dashboard Members Directory Entities Directory Events Resources Circles Discover circles (0) My circles (10) Create a Circle Messages Legal Information

Discover circles (0) My circles (10)

SEARCH

CREATE A CIRCLE

MESSAGES

LEGAL INFORMATION

Being part of a circle give you access to the list of its members and the content of it: messages, events and resources as any member of a circle could attach event(s) and/or Resource(s) to this circle.

Messages are displayed with the top first icon on the right, list of members with the top second icon on the right while Event(s) and Resource(s) are the last two ones.

SpaceLinkers Community Platform Beta

Search (ctrl+k) Dashboard Members Directory Entities Directory Events Resources Circles Capacity Building Equity ESA SFIH Loan M&A SFIH Internal Team Space Insurance SpaceLinkers All Mem... Supporting Services Feedback SpaceLin... Messages Legal Information

**Capacity Building - Enabling dialogue between space stakeholders and investments managers**

Thursday Aug 11th 2022

 **emondon** Administrateur 08:13

all In the context of the EU Space User Consultation Platform (UCP), a systematic consultation process with the community of users of GNSS and Earth Observation services and technologies in order to know their needs so that they can be taken into account by the European Space Programme, including Copernicus, EGNOS and Galileo, EUSPA, the European Agency for the Space Programme (<https://www.euspa.europa.eu/>) is organizing in Prague on the 3rd of October 2022 a UCP session dedicated to Insurance and Finance: <https://www.euspaceweek.eu/programme/03-10-2022/eu-space-user-consultation-platform-insurance-finance>. Registration to the EU Space Week including this UCP session should be made here <https://www.euspaceweek.eu/>

Tuesday Aug 30th 2022

 **GaetanP** 13:31

Read about the latest space market analysis by ESPI: <https://www.espi.or.at/reports/#:-text=ESPI%20Reports%20offer%20an%20in%20formulate%20policy%20advice%20and%20recommendations>

 3

Wednesday Sep 14th 2022

 **emondon** Administrateur 10:36

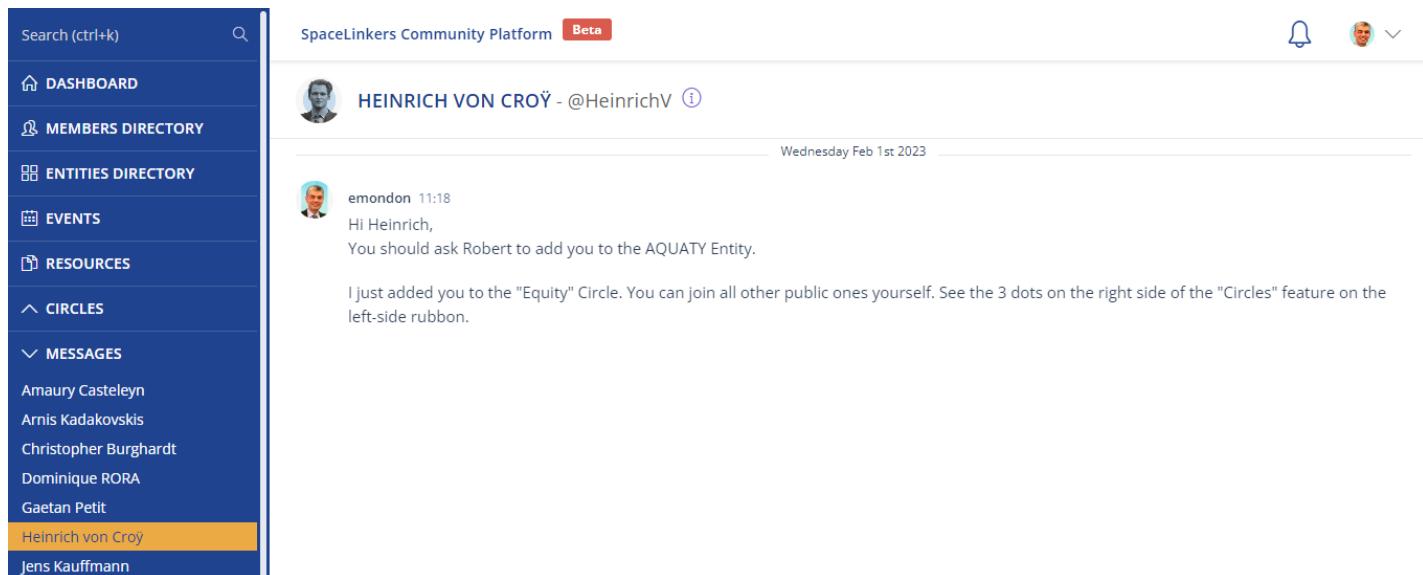
all Who is attending to IAC in Paris next week <https://iac2022.org/>, ISD @ ESTEC on 28 and 29 September 2022 <https://isd.esa.int/> and European Space Week (EUSW) in Prague 3-6 October 2022 <https://www.euspaceweek.eu/> ?

 1

Friday Oct 7th 2022

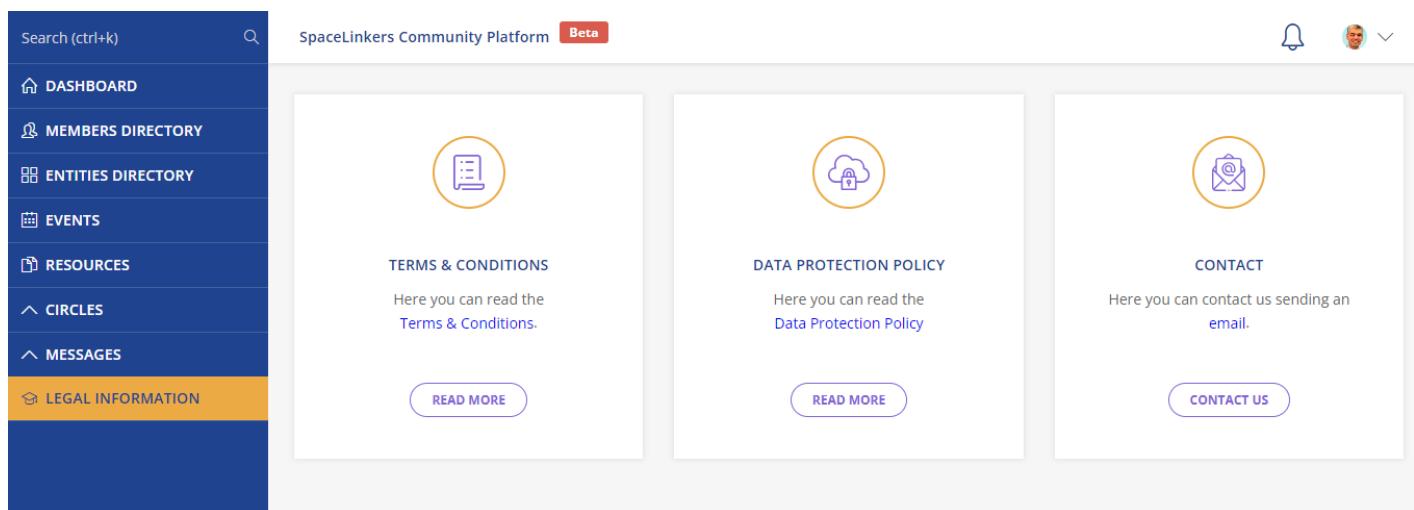
 **NinaW** 10:51

One member can send as well direct messages to another member



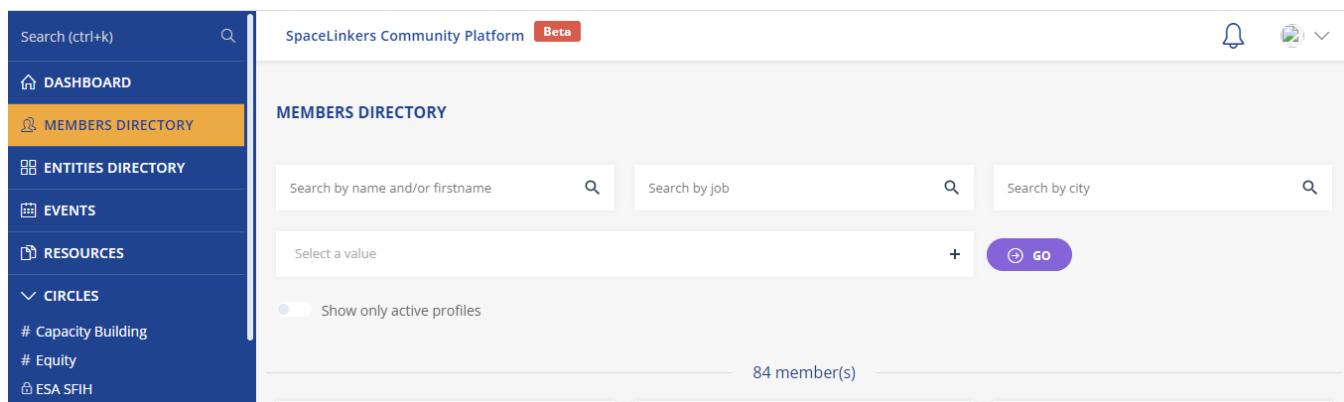
The screenshot shows the SpaceLinkers Community Platform interface. On the left, a dark sidebar lists various sections: DASHBOARD, MEMBERS DIRECTORY, ENTITIES DIRECTORY, EVENTS, RESOURCES, CIRCLES, and MESSAGES. The MESSAGES section is expanded, showing a list of users: Amaury Casteleyn, Arnis Kadakovskis, Christopher Burghardt, Dominique RORA, Gaetan Petit, Heinrich von Croy (highlighted in yellow), and Jens Kauffmann. The main content area shows a profile for Heinrich von Croy (@HeinrichV). A message from emondon (11:18) is displayed: "Hi Heinrich, You should ask Robert to add you to the AQUATY Entity." Another message from emondon follows: "I just added you to the "Equity" Circle. You can join all other public ones yourself. See the 3 dots on the right side of the "Circles" feature on the left-side ribbon." The top right corner shows a user icon and a bell icon.

If any user is willing to check the Terms & Conditions and the Data Protection Policy applicable to the Community Platform, it is possible through the “Legal Information” feature on the left side of the application.



The screenshot shows the SpaceLinkers Community Platform interface. The left sidebar includes a section for LEGAL INFORMATION, which is highlighted in yellow. The main content area displays three cards: "TERMS & CONDITIONS" (with a document icon), "DATA PROTECTION POLICY" (with a cloud and lock icon), and "CONTACT" (with an envelope icon). Each card has a "READ MORE" button at the bottom. The top right corner shows a user icon and a bell icon.

As mentioned in the proposal, “one important Key Performance Indicator (KPI) for this activity will be the number of stakeholders who joined the online SFIH Community. We set this KPI at 100 stakeholders at the end of this activity.”



The screenshot shows the SpaceLinkers Community Platform interface. The left sidebar includes a section for MEMBERS DIRECTORY, which is highlighted in yellow. The main content area is titled "MEMBERS DIRECTORY" and features three search input fields: "Search by name and/or firstname", "Search by job", and "Search by city". Below these is a dropdown menu with the placeholder "Select a value" and a "GO" button. A checkbox "Show only active profiles" is also present. At the bottom, it says "84 member(s)". The top right corner shows a user icon and a bell icon.

So, as of 17<sup>th</sup> of July 2023, we have 84 members which is good but only 84% of the initial objective. Outreach activities played a key role there so the next section is detailing those.

## Community Management

### Community Manager

As the community manager, Nina Walker was the first point of contact for the members and responsible for creating and managing the online voice of the project to build brand awareness within the online SpaceLinkers Community.

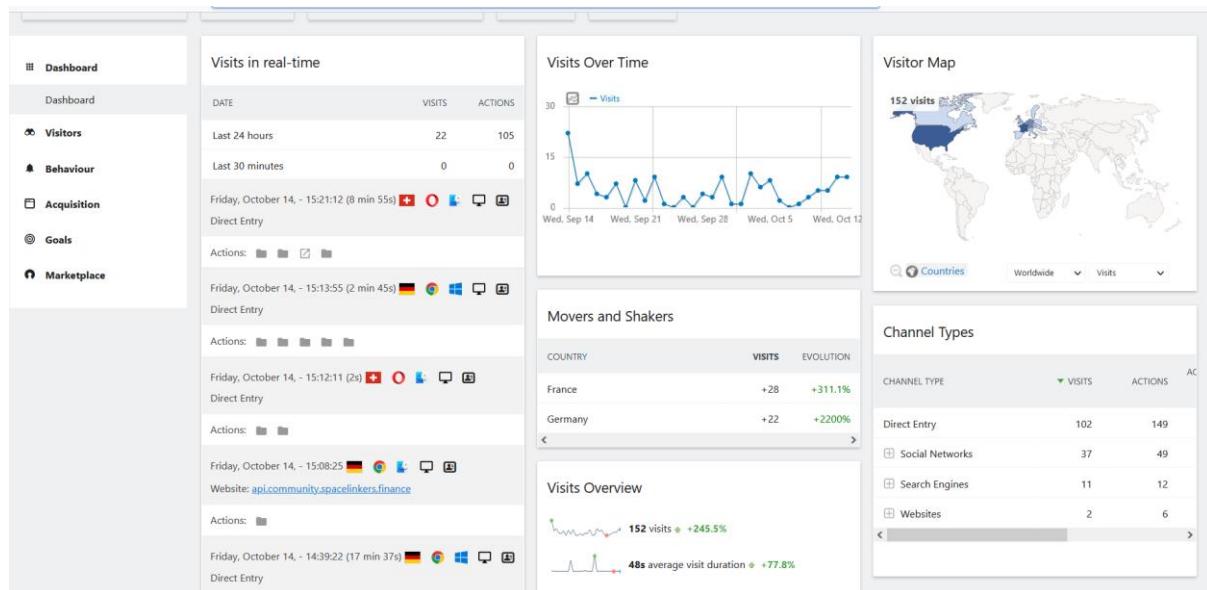
The goal of the community management on SpaceLinkers is to create an active, lively community on the platform which shares and compiles information in a comprehensive and efficient manner. In case of comments, requests, questions or issues with their profile, the members can easily contact the community manager, which then helps them to detect the issue and forwards it, if necessary, to internal stakeholder, such as the technical lead.

Members are invited to join the Circles (discussion channels) relevant to them, to post information on topics you'd like to share in Resources, and to check out/add events of their interest.

To increase the number of Resources on the platform, we implemented a new community communication initiative using LinkedIn. Members of the Advisory Board of SpaceLinkers are advised to tag the SpaceLinkers account in comments under posts/articles that they find interesting. SpaceLinkers will then reshare these posts and add them to the platform, either in the Circles for quick news, or as a Resource for more in-depth information.

To better understand the users and grow an international community, SpaceLinkers is using the LinkedIn Analytics as well as Matomo. Matomo is an open-source web analytics application which is free and GDPR-compliant. Using these types of statistics can help us to define and analyse relevant Community metrics.

Next to engaging online with the members, Nina was also attending networking events and relevant industry workshops, such as the UCP at the European Space Week 2022 and the ESA Industry Space Days 2022.



## Outreach

We attended to numerous events (20), on-line and on-site, where we promoted SFIH project and SpaceLinkers Community Platform.

Here below is the list of these events.

Note: we can provide to ESA the scans of the business card we collected there, upon request.

Date (for us)	Location (for us)	Name of the event
28 March 2022	EUSPA, Prague (CZ)	Capacity building program for fund managers Episode 1: Infrastructure Lifecycle Support from Space
8 April 2022	On-line	CASSINI Matchmaking: Kick-Off Event
27 April 2022	On-line	EIC funding opportunities for space start-ups and SMEs
29 April 2022	On-line	CASSINI Matchmaking: Webinar on Open Call
2 May 2022	EC DG DEFIS, Brussels (BE)	Capacity building program for fund managers Episode 2: Security and defence (in and from space)
11 May 2022	London (UK)	Space2Earth Sustainable Finance event by Space4Impact
16 May 2022	On-line	XIX ESA Investor Forum
1 June 2022	On-line	Entrepreneurship Day and Capacity building program for fund managers Episode 3: Consumer space solutions: well-being, education and entertainment
29-30 June 2022	Paris (FR)	Capacity building program for fund managers Episode 4: “Backing the stars of Europe: New horizons for private investment funds” will be held on
21 July 2022	Munich (DE)	SpaceFounders Networking Event
28-29 September 2022	ESTEC, Noordwijk (NL)	Industry Space Days 2022
3-6 October 2022	Prague (CZ)	European Space Week 2022
11 October 2022	Antwerp (BE)	Big Score Space Sessions
15-16 February 2023	Cannes (FR)	Health from Space
22-23 February 2023	EC DG DEFIS, Brussels (BE)	3rd Meeting of the European Union Industry and Start-ups Forum on STM (EISF)
20-21 Mars 2023	Toulouse (FR)	Occitanie Invest 2023
23-24 May 2023	Brussels (BE)	4th Meeting of the European Union Industry and Start-ups Forum on STM (EISF)
25 May 2023	Tallinn (EE)	‘Backing the stars of Europe – Investor Workshop X CASSINI Matchmaking’
13 June 2023	Brussels (BE)	EXPANDEO 2023
28 June 2023	Prague (CZ)	CASSINI Entrepreneurship Days 2023

## Economic sustainability and Business Models (EBM)

This activity is all about data sharing between entities which - according to the document "A European strategy for data"<sup>27</sup> - "has not taken off at sufficient scale. This is due to a lack of economic incentives (including the fear of losing a competitive edge), lack of trust between economic operators that the data will be used in line with contractual agreements, imbalances in negotiating power, the fear of misappropriation of the data by third parties, and a lack of legal clarity on who can do what with the data (for example for co-created data, in particular IoT data)".

Therefore, we worked on this very challenging topic for designing and implementing the appropriate business model(s) for the SFIH.

Considering the nature of SFIH and our target that at the end of the 12-month pilot, the SFIH should be self-sustainable, we provided to ESA a (preliminary) Business Plan in January 2022.

Considering that SFIH is primarily about creating an ecosystem and a community of various stakeholders, instead of using the "classical" Strategyzer Business Model Canvas<sup>28</sup>, we used the Ownership Model Canvas<sup>29</sup>, co-created with Start.coop Co-Director Greg Brodsky, supported by the Cooperative Development Foundation, under a Creative Commons Attribution 4.0 International License<sup>30</sup>. More information about it is here <https://medium.com/start-coop/introducing-the-ownership-model-canvas-62244cb36a55>.

The initial Ownership Model Canvas related to SFIH, in February 2022, was the following:

Ownership Model Canvas V1.0		Project name: SFIH	Filled in by: Emmanuel MONDON	Today's date: 4th of Feb. 2022
Stakeholders	Benefits	Expectations	Governance Rights	Financial Rights
Who are your member-owners? Who are the first to join?  - SMEs looking for money - SMEs looking for insurance - SCE2 Partners involved in SFIH operations - Incubators and Accelerators - Deal flow service providers - Investors - Insurers  Who are your non-owner stakeholders?  SFIH Community members	What benefits do your member-owners get?  Revenue share among "in between parties"  Continuous new leads for investors, insurers and service providers  Easier access to larger offerings for SMEs	What financial and non-financial (e.g., labor) inputs are required for member-owners?  Incubators and Accelerators bring to the SFIH Community Platform at least 10 SMEs (each) per year  Investors, Insurers and service providers are subscribing annually to the SFIH service and expressing their new requirements and feedback on a monthly basis  SCE2 Partners are adapting the SFIH service  SMEs are paying success fees	What kinds of decisions does your company make? Who makes which kind of decisions?  Decisions: Select Advisors and SFIH Steering Committee (all member-owners represented) Plan (all SFIH Steering Committee members) Bylaw changes (all members) Day-to-day operations (SCE2 Partners involved in SFIH operations) Meetings: Every week - operations team Every month - "in between parties" and Advisors Every quarter - SFIH Steering Committee	What determines if/how you distribute surplus profits (dividends) to member-owners?  Any surplus on Year N will be distributed as follow: 40% to SCE2 Partners 40% to Incubators and Accelerators 20% as discount (% TBD) to yearly subscription Year N+1 for Investors, Insurers and service providers who closed deals Year N thanks to SFIH.  Part (% TBD) of Success Fees paid by SME brought by one Incubator/Accelerator will be paid back to this Incubator/Accelerator
Guidance	Investment			
Who are your advisors, and which stakeholder groups do they represent? If you have a board of directors, how many board seats go to each stakeholder group?  - Advisors (20) representing SMEs (5), investors (8), insurers (2), service providers (5) - SFIH Steering Committee (9 seats): Incubators and Accelerators (3), SCE2 Partners (3) and Advisors (3)	How much money do you need to be viable over the next year? How much can you raise from member-owners vs other sources?  Approx. 100K€ for 12 months of operations: 2022 is covered by ESA (99 015€). Years after are estimated at 97 785€. Yearly Subscriptions should cover these costs, other sources are success fees, if any			

In the next section, we are detailing the insights we got in the past 12 months about 3 complementary types of business models.

<sup>27</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52020DC0066&from=EN>

<sup>28</sup> <https://business.esa.int/sites/business/files/the-business-model-canvas.docx>

<sup>29</sup> [https://docs.google.com/presentation/d/1PxRyl-AqcxXoNpns0p\\_CyqEbNIHjU6845pdUqLlfQV8/edit#slide=id.gc7f688451b\\_0\\_0](https://docs.google.com/presentation/d/1PxRyl-AqcxXoNpns0p_CyqEbNIHjU6845pdUqLlfQV8/edit#slide=id.gc7f688451b_0_0)

<sup>30</sup> <https://creativecommons.org/licenses/by/4.0/>

## Subscription

As mentioned in the proposal, “after 12-month pilot, we target to sell SFIH as a subscription service.”

It is clear that the usage of the Community Platform by its members is not at all a level where we could sell to them a subscription service. So we should not rely on revenue coming from annual subscription.

## Success Fees

Although we haven't closed yet a deal, we think that we can get some revenue coming from success fees.

For instance, we have an informal agreement to get 20% of the services provided by a partner related to fundraising.

Let's take a real example:

We brought to one SFIH partner a company who is looking for 50M€.

Let's assume the partner is

- finding for the company 20M€
- taking 3% to 7% of the 20M€ for its rendered services

So we can get minimum  $20,000,000\text{€} * 3\% * 20\% = 120,000\text{€}$

This single deal could cover the annual cost of SFIH. It just needs to be closed...

We are currently working on 5 deals, 5 to 10M€ each, so if we are successful, success fees generated by one large deal (20M€) or 2 medium deals (10M€ each) or 4 small deals (5M€ each) could easily cover 12 to 24 months of operation (approx.. 100K€ per year).

## Leads generation (for deal flow downstream services)

We have signed a Preliminary Cooperation Agreement with Aquaty GmbH on the 28<sup>th</sup> of December 2022 and we expect to have it up and running by end of 2023.

## Findings

Since June 2022, we printed 500 SpaceLinkers flyers that we gave to people we met at one or another event listed above. So the transformation rate from 500 contacts to 84 members is 16,8%.

Partnering with ESA BIC or public accelerator is not straight forward because they are not allowed to be paid back for bringing leads. We need to figure out what benefits (in-kind but not money) we can give back to them.

Real serious investors are looking for real revenue, excluding grant and public support. We introduced a number of opportunities to one investor which was very interested in the companies but didn't proceed further for different reasons:

- investing in a listed company is not possible for them
- not enough "real" revenue
- investing not less than 10M€ because the cost of the analysis and due diligence is too high for smaller tickets

There is a real need for 1M€ to 10M€, between seed and series A, very under-addressed by the current players. We gathered in the past 12 months more than 20 requests in that range.

The investors community is still "relationship"-based, very *intuitu personae* and on-line community platform is not its preferred tool.

Investors putting 1M€-10M€ into a company are not keen at all to give whatever fees (retainer and/or success) to third-party, so as the company getting 1M€-10M€. In that context, the brokering model is not obvious.

Since end of 2022, access to capital is more and more difficult so we are anticipating by end of 2023 a number of requests more M&A-oriented than funding-oriented. We are already working on a couple of those.

Related to insurance, there is a real need to find ways to insure "small" assets as revealed in the exchanges on the public circle "Space Insurance - Insurance related to space activities" between a Space SME (Vincent TIGNY - Director, Sales and Marketing - New Space / Instrumentation @ AMOS - <https://www.amos.be/application/space-systems>) and insurer/broker (Dominique RORA - Head of Space Underwriting - France @ AXA XL and Guillaume de Dinechin - CEO @ Aon International Space Brokers France).

## SFIH Impacts

### In terms of start-up creation and company's acceleration

Finance support is a must for Micro and Small entities related to space because those have great technical ideas but absolutely no clue how to approach the relevant investors and even worse being able to prepare the required financial documentation and discuss it with investors. That's what our agreement with Aquaty is focusing on i.e. streamlining the startup process according to investors' expectations.

Positive feedback received from one demand-side startup - Carbon Europe (EE) - about Aquaty.

Feedback from one demand-side proxy: Space2Earth Accelerator

"The Space2Earth Accelerator brings together space startups and non-space companies to promote the adoption of space tech, especially satellite imagery analytics, across industries.

We offered SpaceLinkers as one of our outside services to our startups, as space startups need investors with a knowledge of the space industry.

We think a platform like SpaceLinkers can bring great additional value to the startups as it allows them to easily find the investors and to be found by them. The possibility to associate the startups with our accelerator would also make it easier to showcase the programmes that the startup is being selected for and offers a neat way for us, the organizers, to showcase the startups and their relevant data in one go to investors.

In the long run, we could think of two additional developments:

- For our future cohort, we think a useful feature on the platform could allow startups to share their experience in fund raising among each other could be useful.
- Accelerator programmes usually take some introduction fees to put the startups in contact with potential investors. With time, this process could be automated via a common platform."

### In terms of innovative tailored-made financial solutions

We have a pretty solid solution for addressing and supporting pre-seed and seed requests ourselves and relevant partners to work with for addressing the larger tickets (>10M€).

We confirm the possibility to implement a real finance platform in founding a German BaFin regulated set-up which enables Space Cooperative Europe SCE to act as a Finanzvermittler und -berater / Financial broker and adviser.

The platform would have many advantages like the possibility to arrange refinancing and to offer financing products to Space-related clients. It may also arrange and offer bonds to its clients which may help them to tap into the financial market.

Furthermore, the platform may also organise finance auctions and attract various boutiques to access it and to offer tailor-made solutions.

## Next steps

Deploying by end of August 2023 the new version of the “Entities” according to the following specifications:

ENTITIES DIRECTORY				
Field	Field type	Mandatory	Specific behaviour / Comments	Common solution / Extension ESA
ENTITY NAME	free input (short text, only one line)	YES		Common solution
ENTITY HEADLINE	free input (short text, only one line)	NO		Common solution
ENTITY DESCRIPTION	free input (long text, with multiple lines)	NO		Common solution
ENTITY LOGO	File selection via file explorer	NO		Common solution
WEBSITE	free input (short text, only one line), with syntax check to validate that it is a website address.	NO		Common solution
TYPE OF ENTITY	single choice drop-down list	YES	Same than Landing Page List	Extension ESA
PHONE	free input (short text, only one line)	NO		Common solution
TWITTER	free input (short text, only one line), with syntax check to validate that it is a website address.	NO		Common solution
FACEBOOK	free input (short text, only one line), with syntax check to validate that it is a website address.	NO		Common solution
LINKEDIN	free input (short text, only one line), with syntax check to validate that it is a website address.	NO		Common solution
INSTAGRAM	free input (short text, only one line), with syntax check to validate that it is a website address.	NO		Common solution
MAIN CONTACT'S FIRST NAME	free input (short text, only one line)	YES	It's the first name of the contact in the company	Extension ESA
MAIN CONTACT'S LAST NAME	free input (short text, only one line)	YES	It's the last name of the contact in the company	Extension ESA
TYPE OF STAKEHOLDERS	single choice drop-down list	YES	Same than Landing Page List	Extension ESA
TAGS	multiple selection list	NO	Tags for Thematic Areas inspired by <a href="https://business.esa.int/projects">https://business.esa.int/projects</a>	Extension ESA
AREA OF INTEREST	single choice drop-down list	YES		Extension ESA
SPACE CONNECTIONS	multiple choice list	YES	Inspired by <a href="https://business.esa.int/projects">https://business.esa.int/projects</a>	Extension ESA
ESA-STAR	single choice drop-down list	YES		Extension ESA
esa-match identifier URL	free input (short text, only one line), with syntax check to validate that it is a website address.	YES	Link with esa-match	Extension ESA
ESA entity code	integer number	YES	Link with esa-star	Extension ESA
COUNTRY OF OPERATION	single choice drop-down list	YES	Same than Landing Page List	Extension ESA
PICTURE 1	File selection via file explorer	NO		Common solution
PICTURE 2	File selection via file explorer	NO		Common solution
PICTURE 3	File selection via file explorer	NO		Common solution
Address	2 free inputs (short text, only one line)	NO		Common solution
Map	Map	N/A		Common solution
Actions				
Actions	Action type		Specific behaviour / Comments	Common solution / Extension ESA
New entity	Button	N/A		Common solution
Map	Switch button	N/A		Common solution
Name search field	free input (short text, only one line)	N/A		Common solution
Search	Button	N/A		Common solution
Edit	Button	N/A		Common solution
Add member	Button	N/A		Common solution
Leave	Button	N/A		Common solution
Area of interest filter	single choice drop-down list	N/A		Extension ESA
Space connections filter	multiple choice list	N/A		Extension ESA
Type of stakeholders filter	single choice drop-down list	N/A		Extension ESA
Country of operation filter	multiple choice list	N/A		Extension ESA
Tags filter	multiple choice list	N/A		Extension ESA

Closing our first financial deal by end of Q3 2023 and making progress on the others by end of Q4 2023.

Signing agreements with Incubators/Accelerators by end of Q4 2023.

Developing links with existing complementary initiatives such as

- ESA Investor Network<sup>31</sup>
- CASSINI Matchmaking<sup>32</sup>
- Space Tech Platform<sup>33</sup>

<sup>31</sup> [https://www.linkedin.com/posts/esa-commercialisation-gateway\\_investor-space-markets-activity-6982989619378171905-yqaT/?utm\\_source=share&utm\\_medium=member\\_desktop](https://www.linkedin.com/posts/esa-commercialisation-gateway_investor-space-markets-activity-6982989619378171905-yqaT/?utm_source=share&utm_medium=member_desktop)

<sup>32</sup> <https://www.cassini.eu/matchmaking/home>

<sup>33</sup> <https://commercialisation.esa.int/space-tech-platform/>

## Conclusion

From the initial idea end of 2020 to today, it was an interesting journey!

Last month, the French law firm De Gaulle Fleurance joined Space Cooperative Europe SCE, bringing to the Ecosystem legal support related to space activities<sup>34</sup> and deep knowledge on M&A including Distress. We are now fully equipped to offer end-to-end services, from a technical, financial and legal perspectives to various stakeholders along the value-chain.

We are more convinced than ever that SpaceLinkers offering makes sense, complements what is existing and brings value to multiple parties. We need to prove it by end of 2023...

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<sup>34</sup> <https://www.degaullefleurance.com/en/space-extraordinary-lever-of-competitiveness-position-your-company/>