INNORBIT

CAPACITY & SUPPORT FOR SUSTAINABLE SPACE INNOVATION

Empowering

innovation intermediaries

to generate sustainable

initiatives to incentivise

and accelerate

the commercialisation

of space innovation

D4.8: InnORBIT Capacity Building Programme - Final version

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Empowering innovation intermediaries to generate sustainable initiatives to incentivise and accelerate the commercialisation of space innovation

COORDINATION AND SUPPORT ACTION

D4.8: InnORBIT Capacity Building Programme - Final version

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Executive summary

The Capacity Building Programme (CBP) is the programme that trains and supports intermediaries to further support their own innovation ecosystems, allowing them to step into the space sector, by means of deploying innovation initiatives with space flavour. Hence, to establish successful and sustainable space innovation initiatives across Central and Eastern Europe. The programme achieves these objectives through training in a space-related topic, so as to raise a minimum of knowledge, together with the transmission of best practices in the organisation of initiatives to support innovators. These initiatives comprise hackathons, sprints, incubators, cafés and accelerators, under the space segment, and exhaustively reaching several others including customised and tailored support.

In brief, the methodology of the Capacity Building Programme is the training of the intermediary on the deployment of innovation initiatives that match its interest and ambitions. The capacitation work is crystallised in the Initiative Deployment Plan (IDP) -during the 1st pilot round- or in the Activity Cards -during the 2nd pilot round-. Thus, the CBP supports conceptualising the IDP which is a detailed plan for the BSP, while the activity cards are a log of the work done and planned. Hence, the logic of the Capacity Building Programme is to be the master action that guides the intermediaries in the planning of their initiatives (IDP) to be launched in the periods known as the Business Support Programme (BSP). It is important to understand that IDPs are highly detailed during the first pilot and not so much during the second, due to the allocated resources in each stage.

The deployment of InnORBIT to the intermediaries has been tested in two stages, first within the consortium intermediaries, -during the 1st pilot round- and later to external innovation intermediaries across Central and Eastern Europe -during the 2nd pilot round-. This document details the actions and initiatives set out by InnORBIT as the methodology of the CBP. The methodology is justified by the previous work during tasks 1.1, 1.2 and 1.3, as well as the objectives for this project.

This document is the final version of the Capacity Building Programme, the third issue, after the successful implementation of the 1st and 2nd pilot rounds. Results and achievements of each pilot could be found in, correspondingly, D3.6, D3.8 Achievements of InnORBIT's support initiatives - 1st & 2nd rounds and D3.7 Enhancing the capacity of innovation intermediaries to better support space innovation.

1   Introduction

The Capacity Building Programme is **InnORBIT's response to the need to increase the level of supporting capacity of Central and Eastern European innovation intermediaries to their innovators**, meaning start-ups, scale-ups and Small and Medium Enterprises (SMEs). The CBP is a stream of direct support to these intermediaries, so they improve their services aiming to reduce the gap in the innovation support mechanisms compared to more mature ecosystems in the space.

The goal of InnORBIT is **to generate sustainable local initiatives to foster and support space innovation in Central and Eastern Europe (EE)**. This is achieved through a chain of programmes, mainly the Capacity Building Programme (CBP) and the Business Support Programme (BSP). In some cases, the deployment stage might include an Initiative Deployment Plan (IDP), which develops in detail the implementation of the initiative. Therefore, the CBP is the first stage of the assistance chain, aiming towards innovation intermediaries. The CBP will help them in organising initiatives for supporting their niches of start-ups, scale-ups and entrepreneurs, in particular in the exploitation of the European Space Programmes Galileo and Copernicus.

> *The Capacity Building Programme (CBP) supports innovation intermediaries in supporting their ecosystems, by deploying innovation initiatives together with InnORBIT's expertise*

During the CBP, InnORBIT assesses the knowledge and ambitions of the intermediary in the space sector. Thereafter, a support plan will be drafted while the intermediary increases his space knowledge and the different tools that could be used to increase the effectiveness of their support. The next stage of the support will be the Business Support Programme, meaning the help provided during the actual deployment of the initiatives. In addition, monitoring and support plans are established for the implementation stage[1]. Both CBP and BSP severely change whether the intermediary has resources or not. This implies how much time and training could be dedicated. In most cases, the intermediary will not be able to allocate funds or personnel, so the CBP and its following BSP will need to be efficient and targeted to the intermediary's ambitions.

This document, D4.8: InnORBIT Capacity Building Programme - Final version, is the third and final iteration of the CBP. The experience and lessons learned during the reach, training, support and deployment are included as a consolidated final edition. There is a continuity relation between the CBP and BSP programmes, having overlapping boundaries since one is the continuation of the other. **InnORBIT helps and builds the capacity of intermediaries to launch successful innovation initiatives (CBP) and self-sustain them**. However, InnORBIT does not apply them as it strives to make initiatives self-sustainable and run by innovation intermediaries (e.g., clusters, innovation hubs, etc.) during the project. There are singular cases in which, InnORBIT will deliver material directly to start-ups like through the Toolbox. However, it is always channelled through local intermediaries so as not to detract from their role and not to place InnORBIT as a competitor of the intermediaries by entering into their business of coaching start-ups.

The nomenclature used in this document includes:

- **Programmes** are a set of initiatives aimed at innovation intermediaries or start-ups, scale-ups and entrepreneurs. InnORBIT programmes are the Capacity Building Programme (CBP) and the Business Support Programme (BSP)
- **Initiatives** are an individual set of services, events, modules, support and guidance to be offered to intermediaries encouraging them to assimilate and deploy within their network. They are described in the Initiative Deployment Plan (IDP), when elaborated.

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[1] D4.1 InnORBIT framework for monitoring and evaluation & D4.2 Evaluation and validation results - First round

- **Services,** the elements composing the local space initiatives, are to be provided by the intermediaries which may include a number of the initiatives through the BSP. The services were first defined during the co-creation workshop as required characteristics or items to be deployed to innovators.
- **Tools,** the components of InnORBIT's digital toolbox (i.e. platforms, methods, programs) aiming to facilitate the delivery or to deploy the BSP and CBP to end-users
- **Modules** or **courses,** a set of lectures, for the core training and mentoring services
- **Lectures,** meaning individual units of training about 20 to 60 minutes. They may include guides, books, further readings, and other training or educational material

Graphically this is summarised as follows:

Figure 1: Rationale of InnORBIT programmes

Services	Initiatives	Programmes	Tools

Defined during the co-creation workshop
• Business training & mentoring
• Technical training & mentoring
• Investment readiness
• Networking & Matchmaking
• Hands-on support on access to financing and funding
• Awareness raising
	Defined during the co-creation workshop
	• Space entrepreneur's instruction
	• Knowledge hub
	• Space training for intermediaries
	• Space coffees
	• Space hackathons
	• Space incubator, sprints and accelerators
		Capacity Building
		
		Business Support
			• Toolbox
			  • Moodle
			  • File repository
			• Meetings/webinars

InnORBIT's first CBP is built on the insights gained during the study phase of the local ecosystems in Greece, Romania, Slovenia and Croatia[1], the survey campaign[2] and the co-creation workshop[3]. In addition, **the CBP received feedback from the actual learnings gained during the deployments**; the first pilot round with internal innovation intermediaries and the second pilot round, with around 25 external intermediaries in total.

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[1] D1.1 The European space support landscape: Insights from Central Eastern and South Central and Eastern Europe

[2] D1.2: Needs and challenges of innovation ecosystems and intermediaries for taking up activity in the EU space sector

[3] D1.3: Co-design of capacity building and business support programmes

2   The rationale of the InnORBIT Capacity Building Programme

2.1   The landscape of the Central and Eastern European innovation support mechanisms

InnORBIT was designed to help create sustainable initiatives in Central and Eastern Europe for supporting start-ups, scale-ups, and entrepreneurs in the space industry. Central and Eastern Europe is a region with some particularities, as first defined in the study of the European space support landscape together with the needs and challenges of innovation ecosystems and intermediaries, and the co-design of the programmes.

Besides the local aspects, **the space sector is divided into two segments** according to their different applications: **upstream and downstream**. It is usual to find a midstream category for the operators that are involved in upstream and downstream. The upstream segment includes all businesses dealing with spacecraft manufacturing and launchers, while the second segment comprises applications that work with the data or signals obtained by the upstream segment and apply to services & products of everyday life. Logically, **there is a strong barrier to entry in terms of knowledge, cost, and experience to perform tasks in the upstream segment. In contrast, downstream applications have a low barrier to entry, with the doors open to new competitors and ideas**. Recent years have seen a growth of companies in what is known as New Space, or the community of relatively new space companies working independently of governments and their major customers, providing cheaper and faster solutions that enable easier access to space, in all segments. This new landscape of opportunities, together with the long trail of the European Union's space components: Galileo, Copernicus and the upcoming SSA and STM, open up possibilities to leverage Central and Eastern Europe as a niche for space entrepreneurship.

The **lack of knowledge and space expertise in Central and Eastern Europe creates a need for training and mentoring programmes** in this field. Targeting new entrepreneurs or start-ups from both space and non-space sectors, in the domains such as transport, logistics, agriculture or energy, healthcare, maritime, environment, etc. More specifically, InnORBIT CBP and BSP seek to build bridges towards applications, reducing the distance between the upstream needs and downstream services. Likewise the Copernicus Academy and its downstream applications network, through specific training, including access to data and Copernicus DIAS, enabling the development of entrepreneurs at a seed stage idea. Correspondingly, InnORBIT's programmes strive to meet the identified training needs, but instead of creating content from scratch, it leverages the training content previously created by Space Hubs' programmes. In other words, bridges shall be built between InnORBIT and other EU initiatives for the synergistic exploitation of the entrepreneurial innovation ecosystem. In addition, another critical aspect is the **immaturity of space innovation support networks in Central and Eastern Europe**. Although there are established innovation networks, when it comes to space they do not have experience enough to foster the niche -with a few exceptions. Supporting Central and Eastern European space entrepreneurs is therefore **achieved by capacitating the intermediary to develop its space-oriented innovation services**, i.e., the Capacity Building Programme, which in practical delivery with initiatives for their ecosystems becomes the Business Support Programme.

Earliest steps towards the definition of the programmes

InnORBIT strives to achieve the empowerment of innovation intermediaries in the space sector, to ultimately foster Central and Eastern Europe's space innovation ecosystem through the CBP and BSP programmes. These pairs of programmes were born from the **needs identified during the preliminary study phases of InnORBIT**, both the status of the support mechanisms **and the needs and challenges of the intermediaries**. Later, a co-design exercise was included, built also on the **information obtained during the co-creation activities**, where regional entities and innovation intermediaries pointed out the most critical aspects and needs of their innovation ecosystems. The 3-stage design process helped to conclude the design of the programmes:

Figure 2: InnORBIT stages for the design of the CBP and BSP programmes

Analysis & study	▶	Consultation/survey	▶	Co-creation

First, the analysis and study stage[1] is based on desk research, expert interviews and validation of the results by local intermediaries. The aim was to map the innovation ecosystem of 4 representative countries of Central and Eastern Europe: Croatia, Greece, Romania, and Slovenia, thus getting a general reading of what is happening with space innovation in the region. Deep dives were obtained as results of the research, per country and other variables, as well as macroeconomic pictures. The **findings revealed that there is a lack of space-related networks**. This is particularly sensitive in the space sector, where funding linked to this activity requires a large amount of capital and frequently, consortia building. International cooperation and developed networks help to remove part of the uncertainty associated with long-term payback periods, underlining the need for innovation networks. This is **aggravated by limited research and development spending in Central and Eastern Europe (EE)**, which is significantly **below the EU27 average**. The upstream space segment is, therefore, weaker as it is sustained by public funding, due to the higher time-to-maturity products which characterise this industry. Sadly, the lack of links with public funding weakens **the space industry, which is not very well understood in Central and Eastern Europe**. Therefore, their outside positioning is pushing them away from the New Space rush market, meaning by New Space to the commercialisation and the new opportunities arising from leveraging the space industry into commercial or private companies. Business downstream models are sometimes not different from IT companies, potentially reducing the gap for new entrants. It is a golden opportunity to catch up fast, but training is needed.

On the other hand, the **inexistence of related industries established in Central and Eastern Europe** impedes the possibility of *lateral growth* in the sector. These companies, although not entirely dedicated to the sector, due to their proximity, are complementary or auxiliary industries and therefore may encourage innovation, if space opportunities are understood. This includes any product suitable for the space industry with little modifications. The negative funding landscape is reinforced by the lack of early-stage funding from banks and the private sector, which is often attempted to be alleviated by institutional funding, such as ESA and Horizon 2020 grants, or EU cohesion funds.

Secondly, the consultation campaign[2] was executed using a survey, providing more granular information on the missing skills of the innovation intermediaries. These actions sought to detect mismatches by comparing the self-perceived skills of the intermediaries against the skills perceived by their local innovators. The survey also dug into the unserved needs of the innovators, covering available skills, missing skills and innovator needs. As for highlights of Central and Eastern Europe's innovation intermediaries, **it was found that they are strong**

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[1] D1.1 The European space support landscape: Insights from Central Eastern and South Central and Eastern Europe

[2] D1.2: Needs and challenges of innovation ecosystems and intermediaries for taking up activity in the EU space sector

in training, mentoring and coaching, as well as in supporting the improvement of pitching and communication skills. They are **used to deliver training and enhance soft skills in their support networks**. However, some aspects are **missing largely related to the knowledge of the space industry.** For example in regulation, market, business, and practices in the space industry. **Funding schemes and opportunities**, together **with intellectual protection** are commonly flagged as an improvement points. This aligns with the innovators' needs, where there is a demand to get to know the technologies and applications currently trending in the space industry. It can be asserted that there is a general lack of knowledge of the space sector.

Third, the co-creation activities[1] were a collaborative effort between experts in business, investment and space markets from all across Europe. A significant presence of innovation intermediaries also attended, to reveal the master lines that the CBP and the BSP should follow. The activities included a dynamic format to encourage brainstorming and funnelling of ideas, **collectively helping to identify missing resources, networks, knowledge and skills, from the innovators' intermediary perspective**. The process includes a 4-stage approach consisting of:

- Acknowledging the major needs of entrepreneurs and the most adequate services in covering those needs
- Brainstorming services and funnelling the most important
- Identifying the missing resources, networks, knowledge, and skills associated with those services
- Determination of the target audience, desired results, specific tools needed and regional customisations for each local ecosystem

From the co-design of the programmes, it has been determined that there is a **strong need for training on the space market**, its programmes, applications, market, and success stories to guide both intermediaries and innovators. The intermediaries that will be implementing the BSP need to master their expertise in the space sector. General support in **access to funding** and investment readiness, which is a cross-cutting issue for any start-up or entrepreneurial adventure, **cannot be forgotten**. This should be covered with training on the opportunities that exist as well as regular updates with calls and announcements that may occur during the deployment of the pilots. The large amount of on-demand training already created by years of Space Hubs and related initiatives was grasped for InnORBIT, recycling training as much as possible for both CBP and BSP programmes. By researching, contacting and partnering through our network and the databases on CORDIS, ESA and EUSPA, the CBP and BSP have included training from several Europan initiatives thus reducing the amount of ad hoc training to be developed in-house. This resource investigation has narrowed the curriculum and training topics and condensed them into the main modules or courses in the syllabus of Figure 10.

Is also important to realise that **InnORBIT is not an entity with evaluation authority, nor does it make a monetary offer to intermediaries**, so **the support and content to be delivered must be sufficiently attractive and effective for intermediaries to implement them pro bono**. This is a severe conditioning criterion that changes the programme deployment. During InnORBIT's deployment, the first pilot funded intermediaries while the second pilot round did not. The main difference found was the interest, meaning that non-funded intermediaries will only be interested in developing initiatives that are aligned with their ambitions. The training will be limited towards these initiatives and understanding the space sector opportunities, at maximum.

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[1] D1.3: Co-design of capacity building and business support programmes

# 3 Fine-tuning of the programme – from the initial to the final version

3.1 Findings during the deployment of the CBP and BSP

During the deployment phases of both Capacity Building and Business Support programmes, notable points have been observed that **have led to changes in the programme's practice**. Perhaps the most relevant are:

- Both **Capacity Building and Business Support programmes cannot be mentioned to external intermediaries**. It is a continuous flow and **intermediaries do not understand the difference**, as they receive support from InnORBIT to develop their initiatives and implicitly their skills and capabilities. Hiding the internal terminology should be the normal procedure, easing the understanding and the services offered.

- Linked to the previous, **intermediaries do not need or want a fixed set of initiatives; they need fully tailored solutions**. They tend to know about all the initiatives to some degree since they are professionals in innovation. Despite being useful to mention a broad variety of initiatives, to illustrate what can be achieved by implementing them, it has been found **useful to show specific deployment of local examples** because it helps to locate strengths and weaknesses quickly, by comparison.

- Again, linked, the full tailoring of the initiative is achieved by setting an initial dialogue between InnORBIT trainers and the local intermediary, where ambitions are presented and then InnORBIT quickly assesses and selects the best option for the intermediary. **The training is therefore directly aimed to understand space opportunities and towards the actual deployment of the selected initiatives.**

> *The service offering is quickly understood with the outline presented during the InfoDays, as InnORBIT transforms business services into initiatives useful for the local intermediary, training it in the process and later on supporting them during the deployment*

Figure 3: InnORBIT mapping of actions as shown during the InfoDay
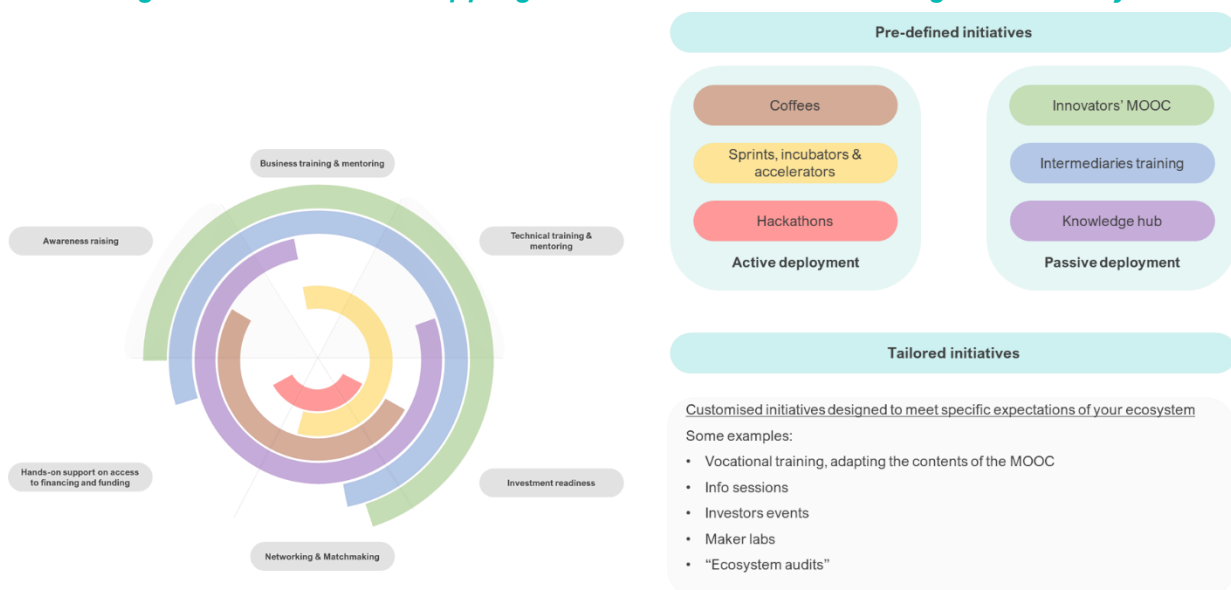
- **The process of the CBP and BSP has not changed; it remains the same but has been highly streamlined**, based on the deployment experience. Since there are no strict formalities, InnORBIT shall jump quickly to the desired phase, as illustrated in the general outline of Figure 7. This is one of the major learnings, as **maximising the flexibility of the programmes, a key aspect of the custom tailoring for each intermediary.** This increases the attractiveness of the programme, as it gives room for the development of each intermediary's ideas and ambitions.

3.2   Specific adjustments from the initial version of the programmes

- **Intermediaries**, particularly those who do not have large resources, **are reluctant to take fixed training** and are not keen on receiving help that is not related to their line of work and expansion interests. While this was anticipated, in practice it has been accentuated to the extent that an intermediary can drop off from the programme if it is talked about training for too long during a session, or about anything that does not move swiftly to their interests.

- The **training shall be very direct towards what the innovation intermediaries want to achieve**. In this way, they participate and get actively involved in the programme. If this is not achieved, there is a danger of dropping out. In relation to the BSP, the CBP training has to move in the same direction as the initiatives they would like to launch later on.

- The **most efficient way to deliver this training is throughout the check-in meetings, by continuously assessing each small step** that is necessary to develop the initiative. For example, in a call discussing the organisation of a CASSINI Hackathon, a detailed plan of the different milestones is made. It is during this plan that the degree of space awareness of the intermediary is evaluated, and when a flaw is detected, some time is spent talking about each specific element. The same goes for every small detail related to the initiative. It is the result of **applying flexibility and adaptation to the needs of each intermediary**, which are vastly different in the end. At the end of the programme, the innovation intermediary is comfortable and enabled to deploy the initiative thanks to the previous CBP which supported only where he wanted and needed

- This custom tailoring does not eliminate the entire fixed design part (D1.4 InnORBIT Capacity Building Programme, initial version). **The programme shall be simply agile in selecting the content needed at each stage**. One example is that, when intermediaries are interested in taking lessons on their own, there is recorded and on-demand material accessible through the Toolbox. Although not usually in demand, several intermediaries have requested, explored and taken lessons through InnORBIT's e-learning platform. Different options and solutions are ready when the intermediary requires so.

- The most effective way to keep track of the training is **maintaining a periodic pace**, thus avoiding stress and also setting lengthy periods. Since it is almost impossible to think that a homework schedule of activities can be set up, it is important to **maintain attention by doing bilateral cooperation**. The involvement of the intermediaries enriches their skillset passively. This is a result of the evolution of the original programme; particularly in streamlining the lines connecting the milestones.

InnORBIT's role is defined as an advisor helping to understand, develop skills, and support the implementation of sustainable innovation initiatives in the space sector

4   The Capacity Building Programme (CBP)

4.1   Capacity Building Programme layout

4.1.1   Overview of the CBP

The CBP is a **programme based on training and advisory services deployed for supporting the innovation intermediaries in enhancing their portfolio of innovation initiatives**. It also helps them to develop their **Initiative Deployment Plan** (IDP) or a **simplified version, as in activity or tracking cards**. From the range of initiatives proposed together with tailored solutions, the innovation intermediaries choose the initiatives they would like to deploy in their ecosystems during the InnORBIT pilot rounds. The CBP exemplifies initially, to the scouted intermediaries, a range of five fixed and commonly known initiatives, allowing them to choose what they would like to have available for their start-up ecosystem. The initiatives are not limited to these, since the plan is fully tailored while InnORBIT supports them in expanding their innovation activities to the space sector.

Previously deployed fixed initiatives are handy to show as local examples in neighbouring countries, illustrating results and achievements, thus encouraging intermediaries to involve deeper. InnORBIT's experience shows that it is not usual for intermediaries to prefer fixed initiatives, and most of them have some degree of tailoring. Thus, **the CBP pursues the goal of supporting innovation intermediaries to set up and run local space custom initiatives that unlock space entrepreneurship in local ecosystems**.

Figure 4: Intermediaries' range of initiatives to deploy after the CBP
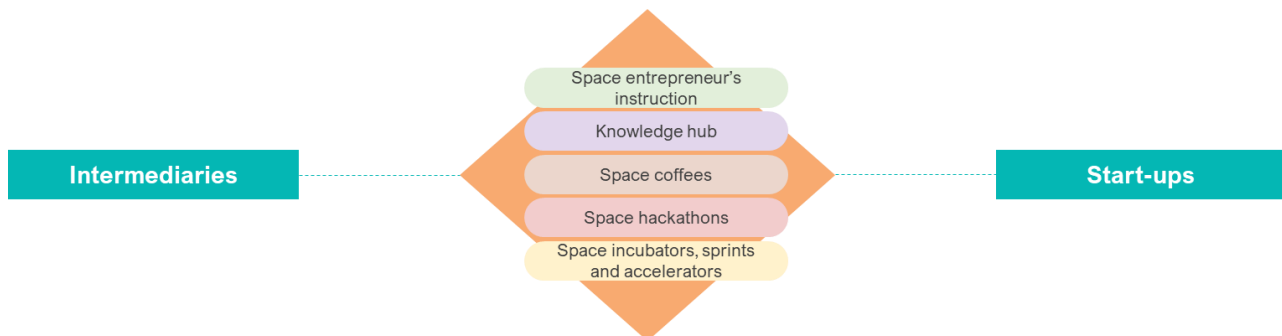
The training during the CBP stage aims to fully empower intermediaries in the execution of the initiatives in later stages. It means, the training aims to support them in deploying initiatives matching their ambitions. Among the fixed initiatives, the on-demand training does not require the intermediary's proactive participation. However, **any other initiative entails dedicated capital and definitely personnel resources**.
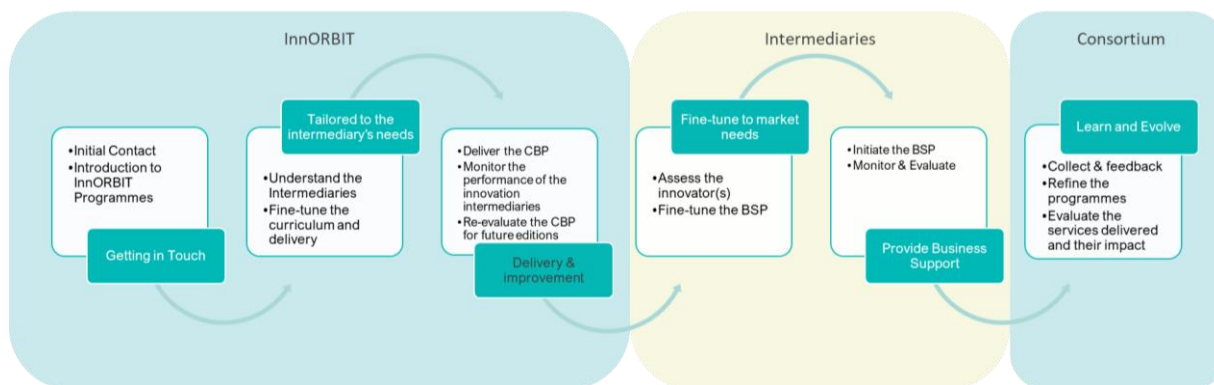
The initiatives chosen by the intermediaries will trigger InnORBIT to train and help them to plan and prepare. The actual deployment is part of the next stage of InnORBIT's programme: the BSP. **Therefore, the CBP and BSP programmes are difficult to be conceived as units divisible from each other**, as depicted in Figure 5: InnORBIT delivery process flow. The overall process starts when contacts are initiated with the intermediaries. After discussing the overall reach of the programmes and an agreement is reached, the CBP is released aiming to find suitable initiatives for each ecosystem and local ambitions. **Contents are tailored and fine-tuned according to their needs, weaknesses, and ambitions**. This selection will be guided during talks with InnORBIT as described in the waypoints chart in Section 4.2.3, CBP waypoints. During the second stage, the BSP, InnORBIT will be monitoring and acting as a support entity for the intermediaries.

The delivery of the CBP and BSP is foreseen to reach a large number of organisations. These forces to have on-demand training, where lectures are recorded and user-ready on a dedicated platform (Toolbox), acting as

a repository for the training. This toolbox also includes links and complementary material to other European initiatives and relevant sites for intermediaries and entrepreneurs.

Given that the BSP is deployed by the intermediary, it is necessary to build a memorandum of understanding before each intermediary launches selected initiatives, so as to get some commitment to track and monitor their start-ups. Nevertheless, the main delivery method is through check-in calls, with a regular period that allows both intermediaries and InnORBIT to work and advance towards the deployment of the initiative.

Figure 5: InnORBIT delivery process flow

4.1.2   The CBP's relation to the service and initiatives

InnORBIT programmes are delivered in the form of initiatives. The services, provided for start-ups, scale-ups and SMEs, are deployed by the intermediaries during the BSP under the initiatives they have selected, according to their innovation ecosystem needs and missing aspirations. The graph, Figure 6: Overview of the services, initiatives, programmes and tools, depicts how the demanded services flow into the designed InnORBIT initiatives, to finally be delivered to intermediaries (CBP) and innovators (BSP). The **CBP ensures that intermediaries have adequate support to deliver the initiatives**. For this, **the CBP trains, in a tailored way, the intermediaries on the implementation of each desired initiative.** Each initiative starts with specific training that continues with a custom follow-up and support, thus ensuring proper deployment. The support provided during the CBP also includes guidance during the elaboration of their Initiative Deployment Plan or an activity card if there are no resources to allocate to detailed planning.

*Figure 6: Overview of the services, initiatives, programmes and tools*
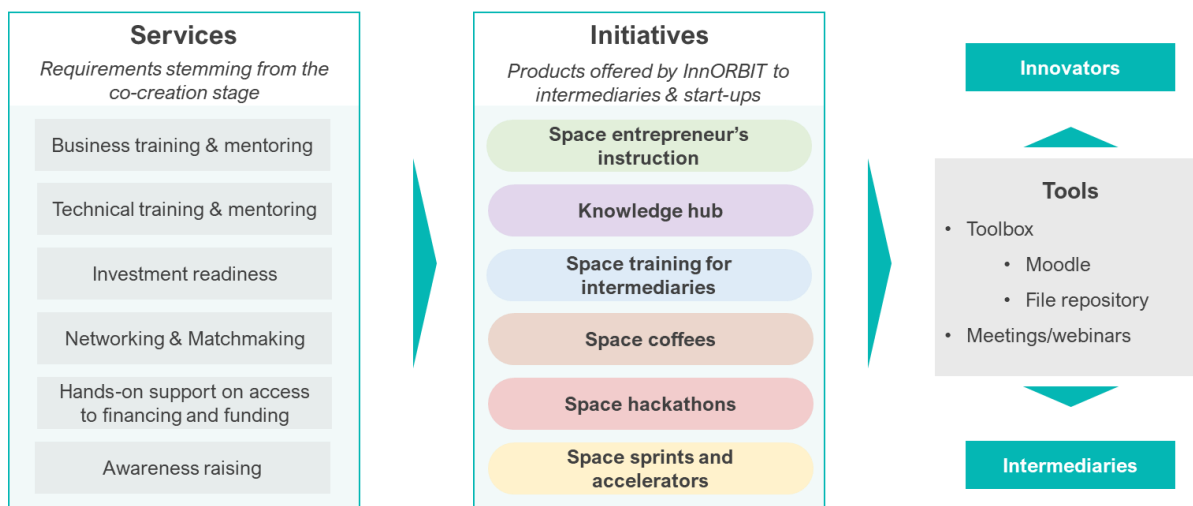
4.2 CBP deployment

4.2.1 Delivery method

The **CBP is deployed through planned calls, meetings, and the use of the InnORBIT Digital Toolbox by means of accessing the utilities included in the toolbox**. The delivery is preceded by a series of previous activities that are not part of the CBP, such as the scouting of intermediaries or the invitation to express their interest. The initial contact and presentation of InnORBIT initiatives take place in a meeting called the InfoDay or the Kick-off, helping to understand what needs and missing skills may be covered by participating in InnORBIT. **The full spectrum of services, initiatives and modules is presented to the intermediary at this point for its consideration**. The gaps are evaluated in a direct conversation between InnORBIT and each intermediary, funnelling the selection of initiatives based on the needs to be identified. In the end, the intermediary cherry-picks one or more initiatives that will entail the services needed, to be customised.

The signature of a Memorandum of Understanding (MoU) is the *de facto* declaration of commitment to developing some initiative under the frame of InnORBIT. During InnORBIT's first and second pilot rounds, some intermediaries received training but did not sign an MoU.

Figure 7: stages of the CBP and BSP programmes deployment
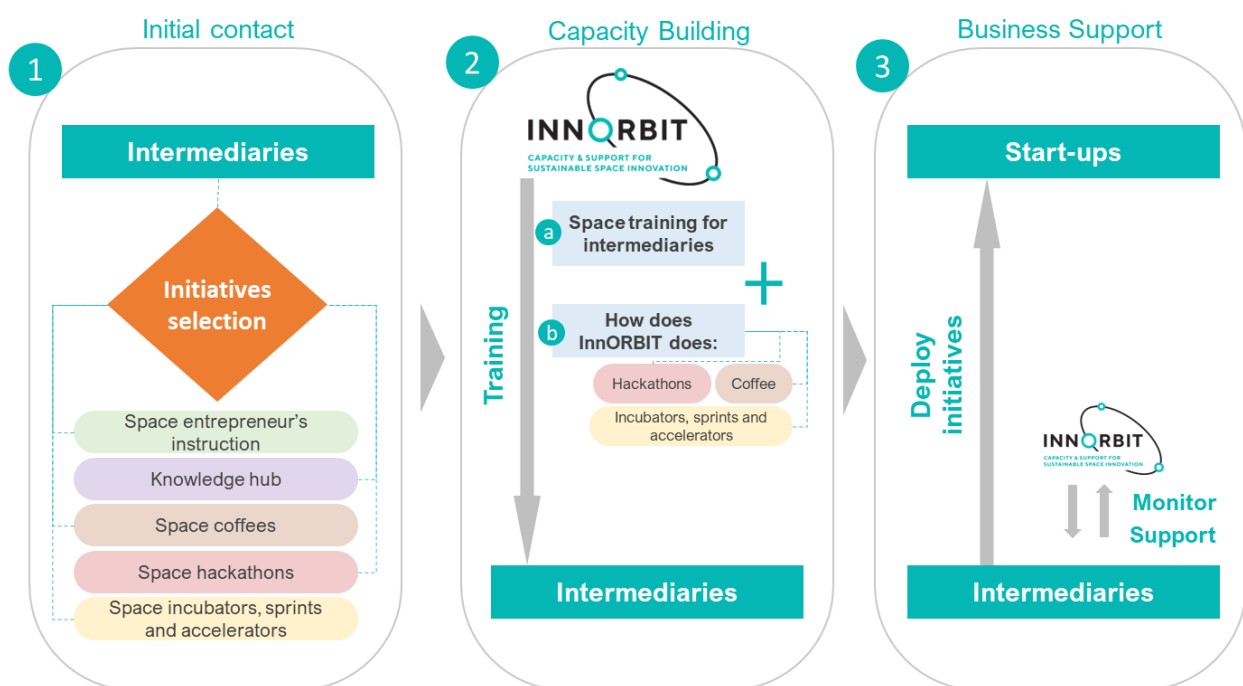
According to Figure 7 stages 1-2-3, a summary of the entire InnORBIT process, **the CBP would strictly fall under stage 2**. This stage will solely be the deployment of the CBP, its contents, training, assessment of gaps, and support to plan the deployment, which will kick off during the period of the BSP.

Due to its tailored nature, the detailed steps of the CBP deployment cannot be detailed beforehand since they are defined in each MoU. However, general steps can be found in more detail in chapter 184.2.3.

4.2.2 Deployment stages

The InnORBIT programmes spread the efforts in a couple of deployment stages. The first pilot round attains 3 intermediaries part of the consortium, aiding to gather internal feedback for programme improvement, while during the second pilot round at least 17 intermediaries are reached, to establish local sustainable initiatives.

- **1st pilot**. At this stage, InnORBIT starts the delivery of the programmes on Corallia, Algebra and ROMSPACE, InnORBIT's internal intermediaries. The details of the contact protocol are further explained in chapter 4.2.3. As they are project partners, the preliminary contact, programme explanations and screening stages were unnecessary. The programmes started with the first workshop. Afterwards, internal intermediaries expressed their interest in some fields of improvement. With the support of InnORBIT during the check-in calls, the training focused on the needs assessed and discussed. The activities carried out during the first pilot could be found in D3.1 Enhancing the capacity of innovation intermediaries to better support space innovation, first version.

Figure 8: 1st pilot deployment scheme
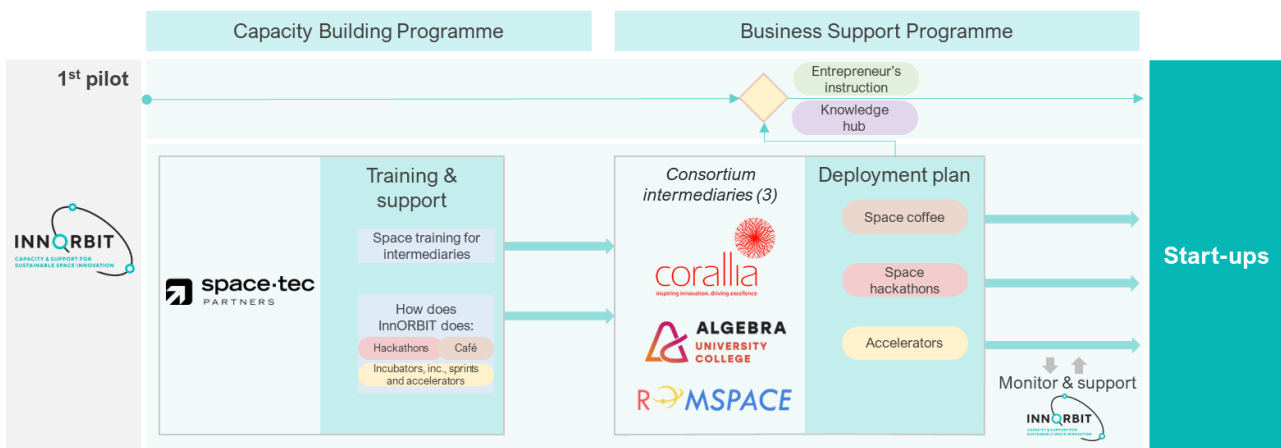
- **2nd pilot**. The process is virtually the same as the 1st, except for the scouting stage for intermediaries and the open call for applications. Once these are received, regular meetings are used to advise, assess, and funnel the interest of the intermediaries into InnORBIT programmes. The target of the 2nd pilot round is to include at least 17 intermediaries. Similarly, the process is more detailed in chapter 4.2.3. Results could be found in Enhancing the capacity of innovation intermediaries to better support space innovation, final version.

Figure 9: 2nd pilot deployment scheme
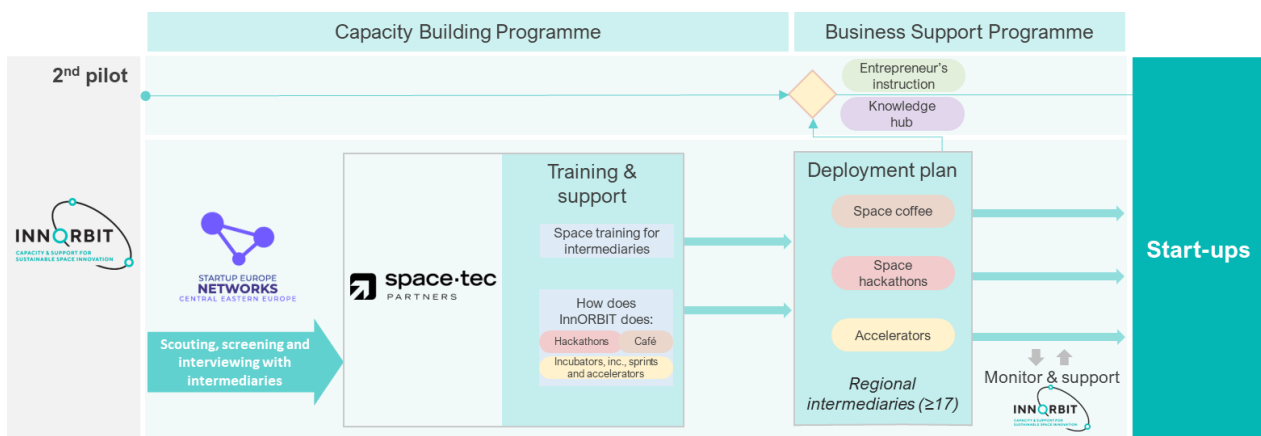
4.2.3 CBP waypoints

The CBP waypoints are the most granular description of deployment at an operational level. Due to the flexibility of the process, they represent the major functional groups that follow the logic of the process, starting by receiving applications, filtering them, organising info sessions, 1:1 conversation and signing the MoU for the launch of the CBP and its subsequent BSP.
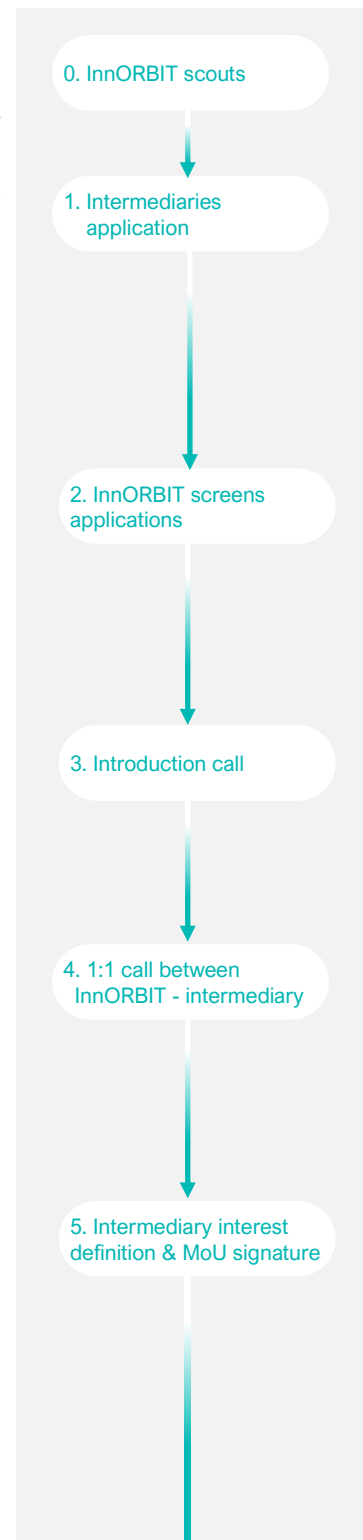
- **Step 1: Open Call**
  — Deadline to express interest
  — High-level information about the CBP and BSP to be shown on the webpage and registration
  — Registration form/page (intermediary basic info, space awareness level, type of innovators, etc.)
  — Promoted campaigns on social media and bilateral communications
  — Automatic response should be provided to the intermediary when completing the expression of interest

- **Step 2: Screening process**
  — To cluster together intermediaries with similar needs
  — Access to the responses from the first registration
  — Review and comment on the applications on a rolling basis, to create homogenous groups, if possible, for the group calls
  — InnORBIT will inform the applicants and inviting them to the group call

- **Step 3: Group calls with intermediaries (info day)**
  — Deliver the whole picture of InnORBIT. Next steps
 — Introduction to InnORBIT services and the offered initiatives

- **Step 4: Individual call**
  — Bilateral between InnORBIT and the intermediary
  — Scope of the services needed and tailoring of the initiatives. Initiative selection based on the services needed
  — Administration and management: MoU and commitment
  — Define timeline and monitoring
  — Demonstration of the Toolbox

- **Step 5: Sign the MoU & kick-off the CBP**
  — Indicative deadline
  — Tailored MoU including:
  — Steps of implementation (BSP and CBP timeline)
  — Agreement to monitor KPIs
  — Time allowance to explore the toolbox material

0. InnORBIT scouts

1. Intermediaries application

2. InnORBIT screens applications

3. Introduction call

4. 1:1 call between InnORBIT - intermediary

5. Intermediary interest definition & MoU signature

- **Step 6: Training release, monitor & support intermediaries within CBP**
    - Toolbox access for intermediaries. Instructor role in BSP training in Moodle, student role in CBP´s Moodle
    - Monitoring of the content quality and impact of the space training
    - Kick-off workshop with the intermediary, covering selected initiatives, showcasing the tools, business support services, hands-on experience on the tools, modules demonstration, and draft a timeline about, by the intermediary, the implementation (BSP)
    - Intermediary's plan, resources, objectives & timeline for the execution of the initiative on the BSP
    - Follow-up and monitoring of the plan. Guidance providing and help. Check critical points. On-demand support (email or calls/meetings)

- **Step 7: Feedback on the CBP**
    - Debriefing from the intermediaries on the usage of the Toolbox and supported initiatives
    - Evaluation through a call between InnORBIT and the intermediary with a semi-structured interview

6. CBP deployment

7. Monitoring framework
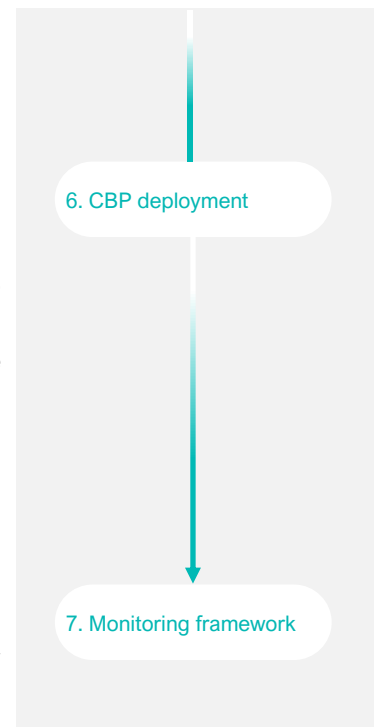
The full map of waypoints of InnORBIT's programmes comprises 10 points. The remaining 3 are part of the BSP, starting from Step 8 onwards, thus covering the complete flow of the InnORBIT programmes. The rest of the steps (i.e., the BSP waypoints) could be found in D4.9 InnORBIT Business Support Programme, final version.

The programme's waypoints represent the maximum number of steps that both CBP and BSP may reach. In practical terms, several points and subpoints might be simplified so as to the resources available from the intermediary.
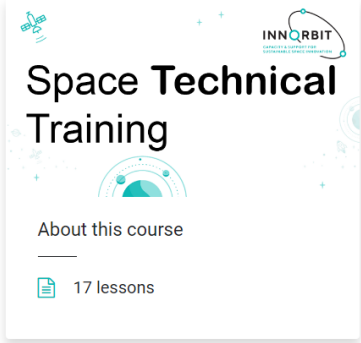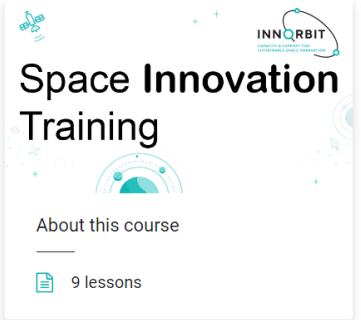
5 Initiatives under the CBP

5.1 On-demand training for intermediaries

The contents of the CBP are aiming to support the intermediaries' understanding of the space sector and perhaps familiarise them with some exotic innovation initiatives. This training is served by InnORBIT as an on-demand complement to the training carried on during the check-in meetings. Is done via the Toolbox (Thinkific) and the repository of files, documents and links. The training involves a large number of lectures to cover all possible potential topics but is summarised and simplified so it is easy to navigate. In order to build it, InnORBIT has prepared ad hoc training and filled the gaps by partnering with some European initiatives. The curriculum of the courses for intermediaries is composed of a couple of modules:

- **Space Technical Training** is a core element and enabler for the non-space enthusiast but with a potential space idea. It has all the essential material to enable innovation intermediaries to understand the basics of the space sector, with in-depth knowledge from years of experience that can act as an eye-opener to foster new possibilities in their ecosystems.
- The **Space Innovation Training** provides support to intermediaries in dealing with typical innovation activities in the space sector. The aim is to provide some aspects gained after years of deploying space innovation initiatives, serving as training for intermediaries when comparing against their own methodology. The module deals with the organisation of hackathons, accelerators, incubators, sprints or cafés, with a sound space flavour. This module is fully developed by InnORBIT.

Figure 10: CBP training curriculum

## 5.2 Pre-defined initiatives for intermediaries

This is the set of initiatives to be implemented by the innovation intermediaries with the support and guidance of InnORBIT during the implementation phase (BSP). It may include any a sprint, a coffee, a hackathon, an incubator or an accelerator. In more detail, the range of fixed initiatives covers:

5.2.3 Space coffee[1]

A space coffee is a type of event - virtual or physical - where a group of space enthusiasts meet and discuss space-related topics with an emphasis on New Space, trends and the latest market news considering its potential for start-ups. It is a relaxed, informal, affordable and straightforward event with a strong focus on community building and networking. The key is the cooperation between the different stakeholders, as the outcome is collaborative. This means that the organisation is made up of a group of space stakeholders who try to leverage their network to get speakers of interest. This type of event is often classified as a grassroots event.

The particularity that gives it its name and makes it unique is that the event takes place over coffee, drinks, lunch or dinner, and less frequently in a simple setting without food and drinks.

Figure 11: Overview of the timeline for a space coffee
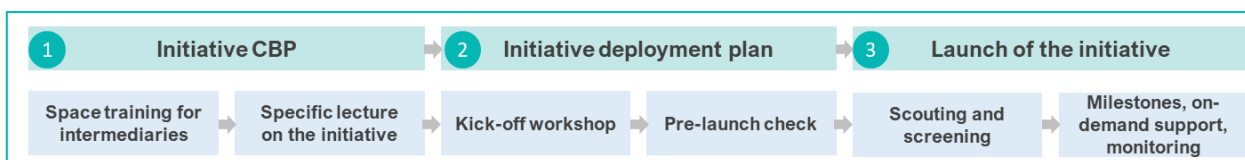
For example, potential topics may include:
- Success stories of CEOs from space start-ups
- Thematic discussion of space applications domains, i.e. hyperspectral imagining, InSAR for the construction industry, space-based IoT for workplace safety in the energy sector, or aluminium alloy 3D printing of combustion chambers.

And some space coffee examples include:
- Geoawesomeness digital meet-up (https://geoawesomeness.com/geoawesomeness-digital-meetup/)
- Global space café (https://www.spacecafe.global/)
- EUSPA EO space café (https://earsc.org/2021/08/31/eocafe-the-eu-agency-for-the-space-programme-euspa/)
- Space Brewery Munich (https://www.linkedin.com/company/spacebrewery)

The event has a very informal setting, which arouses curiosity because of the spontaneity of the conversation. Despite having a hidden or fake fixed agenda, it does not convey this perception. It usually has the outline of a keynote speech led by a presenter, followed by a Q&A session in panel format and closes with an informal networking opportunity. This chorus can be repeated up to 4 times, depending on the organisers.

The audience consists typically of space and non-space students, and professionals. Given the nature of the event, participants pay for their own food and drinks.

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[1] The consortium became aware close to the end of the project that the term "Space Café" is a registered trademark in the EU [link] . As such, the term has been updated to "Space Coffee" on new public project documentation and will be followed in any future activities by the consortium.

The space coffee is inexpensive as it does not require a lot of preparation time and hours. The venue can often be found for free, usually an eatery, a bar or even a university. Speakers tend to participate pro bono while they are invited for a drink or lunch. Nevertheless, finding the proper speaker may represent the hardest challenge for a café. For example, in a series of 10 space cafés, having 20 keynote speakers may be a difficult task if the ecosystem is not very well developed.

5.2.4   Space hackathons

A space hackathon is a race that seeks to solve a challenge with a specific theme that is relevant to space, the economy and society. Logically, the first thing it will require is expert advice to determine the challenge as well as what space data is to be made available and how. Despite Earth Observation data is usually used due to its accessibility, other things like cloud storage and processing power may require further preparation. Copernicus DIAS may help with this if negotiated properly. The hackathon format involves a number of participants meeting at a specific location for a certain period of time. This implies that the venue, facilities, food, and related supplies will have to be secured.

Figure 12: Overview of the timeline for a space hackathon
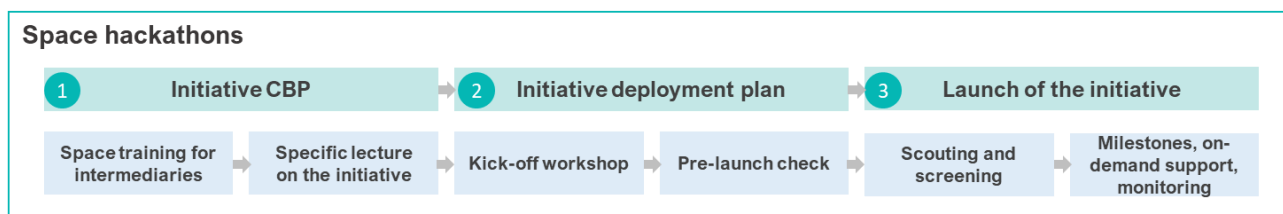
Critical factors are related to the cost of the venue, furniture, subsistence, accommodation and manpower required. Among these, the following should be defined:

- Jury, although it can be external and high-level people
- Technical experts to collaborate in the definition of the technical parts, the technical challenge to solve
- Business experts for market validation. At least one person shall understand the technical theme.
- Moderator and facilitators. Mentors, around 1 per team during the days of the event, with teams of around 3 to 10 hackers
- Organisation and planning, which can take around a natural month

To help to reduce costs, hackathons usually are organised with the support of sponsors or external organisations that will bring on-kind benefits (*the pizzas and red bulls*, IT material) for advertising slots. The organisation shall be a collaborative matter to keep costs down, and it is important to find partners.

Other physical requirements are the cash prize, the business canvases to guide the process, and the advertising and promotion to find quality participants. Participants are asked to bring their laptops. However, furniture will have to be considered: tables, rooms, post-it notes, markers, printouts, electricity distribution, technical support, internet, etc. The usage of online platforms normally facilitates the organisation and management of the participants (DEFPOST, Junction, TAIKAI, ETC, etc.)

5.2.5   Space sprints, incubators and accelerators

Space sprints, incubators and accelerators are forms of innovation support that invest time, mentoring and funds in a start-up to try to help it move through its stages more quickly. All of them have a strong mentoring or tutoring relationship, along with the possibility of funding. Generically speaking, sprints would be the shortest initiatives with a strong focus on team mentoring, followed by incubators, where the training comes from the

shared ecosystem, and ending with accelerators, where some funding and more personalised mentoring usually coexist. In more detail:

- Sprints are short mentoring events that aim to seed or improve early-stage start-ups. A sprint occurs in short cycles of one month, in which a cohort will work on finding solutions to a challenge while testing their ideas for validation.

- Incubators work with start-ups with ideas already generated but in initial stages prior to raising funds. They usually seek to place them in the same physical location so that there is cross-fertilisation with other start-ups. The atmosphere of sharing a facility amongst other start-ups encourages the learning of the entrepreneurs. Often, they are given a certain amount of training/mentoring where they are guided through their gaps, usually associated with the business side. An incubation programme will last at least half a year, while preparation can last another half a year. The organisation of incubators is more of a continuous process, where start-ups apply on a series of cut-off dates.

- An accelerator can be understood as an *incubator on steroids*. Having a common facility is usual as well, thus creating an ecosystem of start-ups. Accelerators have lots of mentoring and usually funding, but sometimes they may not provide capital and be only a mentoring programme. In some cases, the accelerator takes a share in the equity of the start-up taking an active role in the development of the company. Accelerators are definitely long-term programmes, lasting at least half a year due to the development of new services, products or market validations. The organisation has a good portion in the scouting as they are only interested in high-potential start-ups.

Figure 13: Overview of the timeline of space sprints, incubators and accelerator

The large organisational workload for an innovation intermediary means that these initiatives require specific funding. Incubators are government-funded as non-repayable or at highly discounted rates. Accelerators follow this trend but the larger amount of training, mentoring, and funding for the start-up demands to secure government funds. Corporate sponsors are also especially important as very few accelerators survive from equity investment. Design sprints are a cheaper alternative for an ecosystem. They can be organised virtually and only require manpower.

Themes are generic for incubators; no sectoral knowledge is required as it is a common and early-stage space. Accelerators, on the other hand, are thematic - *about the space* - and will require specific knowledge. Sprints are strongly thematic and follow challenges of nowadays and shall target early immature seed-stage groups, depending on the programme definition.

5.3 New initiatives & tailored solutions

The base of pre-defined initiatives proved to be small during the second pilot round. Innovation intermediaries are professionals in their activities, and although they are not experts in the space sector, they are well aware of the different tools they can use to stimulate their ecosystems. Therefore, during the capacitation with them, **the set of pre-defined initiatives has been expanded to incorporate a broader spectrum to offer** at the beginning of the project. In this way, the intermediary, having a wider spectrum to choose from, is able to take a path that will then be customised according to their necessities.

Tailored solutions are any initiatives deployed after intensive discussions and customisation with the intermediary, reaching a perfect match for its ecosystem, aspiration, and resources. The practice with external intermediaries shows that no pre-defined initiative fully matches the intermediary's aspirations. Thus, **the perfect fit between InnORBIT's offer and the intermediary's aspirations is an adaptation of some core plan or initiative**. The core initiatives that grew from those cited above in chapter 5.2, were:

- **Ecosystem analysis** is a tool to self-understand the positioning of the intermediary in its ecosystem and its ecosystem in a larger frame. The ecosystem analysis is a tool that leverages intermediaries in their quest for public funds, by dropping the light on the problems they encounter in their endeavours to support their innovation ecosystem. InnORBIT provides intermediaries with a proven methodology, research templates and working documents so that they can develop their study on their particular ecosystem.

- **Start-up events**, or workshops, presentations and information days where innovators come to hear about a very specific topic. Start-up events are a generic group that encompasses a wide range of different actions, including workshops, open chats and ted-style lectures.

- **Meet-up series**, as a generalisation of cafés. The essence is the same, but with an open format. In other words, no need to have a coffee, drink or food; just an essential meet-up.

- **Competitions and challenges**, as initiatives that seek to stimulate the competitiveness of innovators in solving a specific problem. Challenges can be simple to encourage participation or complex, seeking the help of the community to solve a real industry or customer problem. It is common to find corporate partners or sponsors who support this initiative as they have an interest in hearing a parallel community's proposed resolution. It is also common to find corporate challenges, where the intermediaries help design with competition within a large corporation and the innovators are the employees themselves. Also, student challenges within the university ecosystem.

- **Investor events**, where innovators are put in contact with investors or business angels. Generally, the profile of private investors requires start-ups to have a certain track record and not to be in a seed stage. For this reason, intermediaries filter the start-ups in their ecosystem to present the most advanced ones, preventing the intermediary from burning out with uninteresting start-ups. Intermediaries ensure to populate their networks of investors by organising sessions where they have the opportunity to discover business opportunities.

- **Makers' laboratories** are excellent support for technical innovation, where the intermediary seeks to facilitate the connection of the ecosystem with the material and goods needed for prototyping. For example, the intermediary provides a space where its innovators can access oscilloscopes, power supplies, power tools, 3D printers, routers and other specialised items.

And outside these, some more exotic initiatives have been worked on, such as **university curriculum design** (innovation), **gamification** of entrepreneurship activities, **case studies**, or **support in application and request for funding** or participation in European programmes.

6 Conclusions and next steps

The present document describes the design memory and methodology of the Capacity Building Programme in its third and final version. Changes and improvements have been noted across the document while updating all the sections. Although the original and fixed plan remains fairly valid, major changes happened in terms of flexibility between different points of the original schedule and the methodology of deployment. This is due mostly to the scarcity of resources of external intermediaries, obligating InnORBIT's actions to be extremely time efficient and adaptable to each intermediary. The inclusion of new initiatives and massive tailoring during the 2nd pilot round is a critical modification from the previous versions of this plan.

During the 1st pilot round much of the weight of the actions came from fixed training with pre-defined initiatives. While this worked well with the intermediaries in this round, it was because they were funded and received a significant motivational boost. The first approach with internal intermediaries proved to be a poor way to proceed with externals, so naturally, the method was modified to make the process less bureaucratic, less rigid, and more adapted to the needs of the local intermediary. The aim was to make InnORBIT fit in with its resource allocation and strategic growth projections. Also, to tailor the initiatives that they could be trained in, always clearly outlining the results they could obtain with local analogues.

The online platform will be hosted by InnORBIT for a few months after the project ends. Long-term viability is lying in the interest of the intermediaries to keep it. Despite this, InnORBIT is collecting hosting-free URLs and links to the material that might endure over time.

Despite intermediaries share common issues, related to the immaturity of the space innovation ecosystem of Central and Eastern Europe, each innovation intermediary has quite different ambitions and plans. Therefore, a variety of initiatives are been deployed across Central and Eastern Europe. The results are reflected in D3.6, D3.8 Achievements of InnORBIT's support initiatives - 1st & 2nd rounds and D3.7 Enhancing the capacity of innovation intermediaries to better support space innovation. No further actions are foreseen. However, D4.5 Replication Guide and similarly D4.6 Policy Recommendations will complement this final design.

Annex

Figure 14: InnORBIT's training syllabus for the CBP