



Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra

Federal Department of the Environment, Transport, Energy, and  
Communications DETEC

**Federal Office of Civil Aviation**  
Innovation Management Office  
U-Space Program

# Memorandum of Cooperation

established between

## The Federal Office of Civil Aviation

Mühlestrasse 2, 3063 Ittigen, Switzerland

hereinafter referred to as “Swiss FOCA”

and

## Skyguide

Route de Pré-Bois 15-17, 1217 Meyrin, Switzerland

hereinafter referred to as “skyguide”

in collaboration with

**U-Space Service Providers, Supplemental Data  
Service Providers, Technology Providers and  
Drone, Ground Control Station or Flight control  
manufacturers**

Federal Office of Civil Aviation FOCA  
Post: 3003 Bern  
Site: [www.foca.admin.ch](http://www.foca.admin.ch)

Hereinafter also individually referred to as the “Party” or collectively as the “Parties”

regarding

# The Swiss U-Space Implementation (SUSI)

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## List of Revisions

| Version | Description           | Date       |
|---------|-----------------------|------------|
| 0.1     | Initial Working Draft | 20.11.2018 |
| 1.0     | Initial Release       | 20.12.2018 |
|         |                       |            |

**whereas**, the Parties jointly identify, quantify, conduct and effectively implement the U-Space capabilities and technologies;

**whereas**, the Parties endeavour to join efforts to implement the Swiss U-Space according to an agreed Swiss U-Space Concept of Operations;

**whereas**, the Parties share the common objective reinforcing their role in the field of aviation and their key role in aviation safety;

**whereas**, the Parties intend to address the needs of the stakeholders of manned and unmanned aviation, of air traffic management and of users with special needs;

**whereas**, the Parties intend to establish a permanent and coordinated cooperation in the implementation of the Swiss U-Space and to share information in accordance with the provisions of this Memorandum of Cooperation;

**whereas**, the Parties intend to establish a registration and identification according to a Registration Concept of Operation expected in Q2 2019;

**whereas**, the Parties aim at providing a pilot version of the Swiss U-Space by January 2019, a first operational Swiss U-Space system by June 2019 and its consecutive development;

**therefore, and in consideration of the mutual interests, the Swiss FOCA, skyguide and other stakeholders, have agreed as follows:**

## **1. Scope and purpose**

The Parties intend herewith to lay down the principles of their cooperation. The purpose of this Memorandum of Cooperation ("MoC") is to establish a cooperative framework in order to set up the Swiss U-Space Implementation (SUSI).

Through their cooperation under this MoC, the Swiss FOCA, skyguide and other stakeholders aim to:

1. Research and mature increasingly complex U-Space operational scenarios, services, technologies and capabilities with focus on an open market with multiple U-Space Service Providers (USPs).
2. Demonstrate those capabilities with the Swiss U-Space Pilot Project starting January 2019 and future U-Space implementations.
3. Deliver technology packages to the Swiss FOCA that provide insight and capability requirements for critical services.
4. Enable the deployment of the mature technologies by means of effective national legislation and with due consideration to safety and security aspects.
5. Investigate on appropriate, Swiss legislation and ensure full compatibility of Swiss legislative and technological solutions with international developments.
6. Develop an effective economic model to ensure sustainability of the system.
7. Publish and communicate lessons learned, experiences and mutual agreements related to U-Space architecture, services, functions, etc.

The present MoC is established in order to clarify the relations between the Parties, their roles and the distribution of the activities. The SUSI should serve the purpose of acting as a catalyst for all activities related to the development of the U-Space by providing a platform for cooperation and collaboration of all Parties.

## **2. Legal nature**

This MoC is a statement of intent and, to the extent not expressly provided otherwise, does not create any directly or indirectly enforceable rights. The Parties will fulfil their responsibilities under this MoC on a best-effort basis. This MoC does not modify or supersede any Swiss law nor affect any provisions under other multilateral or bilateral agreements in force and applicable to the Parties.

This MoC is governed by the Swiss law. Any dispute, controversy or claim arising out of or in relation to this MoC shall be settled amicably by way of direct negotiations within thirty days from the notification of a dispute, controversy or claim by one Party to the other Parties.

## **3. Constitution and participation in the Swiss U-Space Implementation (SUSI)**

In order to achieve the above-mentioned objectives, the Parties herewith set up a Swiss U-Space Implementation (SUSI) composed of the relevant stakeholders and complemented by the participation of experts or representatives of third parties whose participation is required. The following roles are foreseen in the Swiss U-space: USP, SDSP, Technology providers as well as Drone, Ground Control Station or Flight control manufacturers.

Any entity complying with the requirements set forth in the Swiss U-Space Concept of Operation (SUSCO) can apply to join the SUSI by contacting the Swiss FOCA U-Space Program Management and, by signature of this MoC, declare to be bound by its terms. The Swiss FOCA will assess together with skyguide as well as the other SUSI Parties if the entity applying to join the SUSI meet the requirements set forth in the SUSCO. The Swiss FOCA will communicate the decision in writing within thirty days after the receipt of the application.

Each Party of the SUSI is expected to positively contribute to the development of the Swiss U-Space. The Swiss FOCA can exclude a member of SUSI if his/her actions do not comply with the articles established by this MoC and/or by requirements set by the associated documents (e.g. SUSCO). Exclusion shall follow the member application process as described above.

## **4. Roles of Parties**

### ***The Swiss FOCA***

The Swiss FOCA is the rulemaking and implementing authority of the Swiss U-Space. Within the Swiss FOCA, the U-Space Program is tasked to oversee and coordinate all necessary actions to support the U-Space implementation and its architecture. In addition, the Swiss FOCA will provide Secretariat to the SUSI.

### ***skyguide***

Skyguide is the implementation executive of the Swiss U-Space. Skyguide is commissioned to implement the applicable legislation and to develop and implement the FIMS. Skyguide will provide different FIMS functionalities and interfaces over time in accordance to the overall SUSI project.

### ***U-Space Service Providers***

The USPs are defined in the SUSCO. Additional requirements to qualify as SUSI USP are as follows:

1. A SUSI USP shall have the ability to connect to the FIMS and provide at least one service via the appropriate communication protocol.
2. A SUSI USP provider shall demonstrate its capability to adhere to the appropriate open communication protocol requirements within the SUSI.

### ***Supplemental Data Service Providers (SDSPs)***

SDSPs as defined in SUSCO are eligible to join the SUSI. It is important to remember that SDSPs are neither connected to the FIMS nor to any USP, and are in general excluded from the SUSI. Exceptions might be allowed on a case by case basis.

### ***Technology providers***

Any identified SUSI member could establish third party cooperation with technology providers (e.g. software manufacturers). Those providers could be eligible Parties, proving they meet the conditions set forth in this MoC.

### ***Drone, Ground Control Station or Flight control manufacturers***

These manufacturers can join the SUSI if they demonstrate their ability to connect to the system via the USP of their choice. This connectivity should be native to the Ground Control Station and not achieved by means of third parties apps or any other third party plug-in that is not fully integrated with the flight control software.

## **5. Implementation**

The SUSI will meet a least eight times a year in order to share evolutions and problems related to the implementation. Coordination and information sharing between meetings will take place electronically. The MoC and its objectives and areas of cooperation as set out in section 1 will be implemented by mutual agreement and regular consultation between the parties. Each party shall designate primary points of contact as well as deputies within each organisation facilitating an effective implementation of the Swiss U-Space.

Any member of the SUSI can submit documents, implementation plans, etc. to be published by SUSI. Publication is subject to a majority vote of the members with a veto right for the Swiss FOCA.

## **6. Exchange of Information and Confidentiality**

The exchange of data and information between the Parties will occur in order to implement this MoC. This includes the effective distribution of data and information within the organizations as necessary on a need to know basis.

Except as otherwise agreed within the SUSI, all information shared within the SUSI shall remain confidential to the organizations involved. The Parties shall sign a common Non-Disclosure Agreement (NDA) if deemed necessary by one of the Parties.

## **7. Intellectual Property**

The intellectual property of the information and the resulting component of the system remains the property of the Party who delivered the service, product and/or material, such as but not limited to, functional concept, Application Program Interfaces (APIs), processes, software and schemes/patterns.

The creation, ownership, licensing or enforcement of Intellectual Property Rights (IPR) arising from any cooperative initiative under this MoC shall be determined by mutual agreement of the involved Parties, except that this MoC shall not affect any IPR of each Party existing before the commencement of the initiative.

Provisions governing IPRs shall be agreed in writing among the involved Parties, as necessary, at the project level, for each specific project before the commencement of each joint project.

## **8. Costs**

Without prejudice to any financial support, each Party bears its own costs as well as the costs related to the tasks for which they are responsible in accordance with the work sharing organised under this MoC and as further detailed in section 4 and 5.

## **9. Insurance and liability**

The parties shall have an adequate insurance coverage, for their activities under this MoC and any damage resulting thereof, at their own expenses. Proof of such insurance coverage shall be disclosed to the Party requesting it.

## **10. Entry into Force, Revision and Termination of the Memorandum**

This MoC takes effect upon its signature by the duly authorised representatives of all the Parties. Any major change will request written agreement of all the Parties.

A Party can terminate this MoC by written notice with immediate effect and bears, subject to the remaining Parties taking all adequate measures that such termination does not adversely affect any activity already in progress under this MoC, any cost of proven damage resulting directly of such a withdrawal from the cooperation.

## 11. Abbreviations

|        |   |
|--------|---|
| API    | Application Program Interface             |
| ATM    | Air Traffic Management                    |
| ConOps | Concept of Operations                     |
| IPR    | Intellectual Property Rights              |
| FIMS   | Flight Information Management System      |
| FOCA   | Federal Office for Civil Aviation         |
| GCS    | Ground Control Station                    |
| MoC    | Memorandum of Cooperation                 |
| NDA    | Non-Disclosure Agreement                  |
| SDSP   | Supplementary Data Service Provider       |
| SUSCO  | Swiss U-Space Concept of Operation        |
| SUSI   | Swiss U-Space Implementation              |
| USP    | Unmanned Aircraft System Service Provider |

## Signatures

In witness whereof, the undersigned representatives duly authorised by their respective organisations, have signed the present Memorandum of Cooperation.

Done in Bern, on the 20<sup>th</sup> December 2018.

Federal Office of Civil Aviation  
Christian Hegner  
Swiss FOCA Director General

skyguide  
Urs Lauener  
Chief Operating Officer

Federal Office of Civil Aviation  
Lorenzo Murzilli  
Swiss U-space Program Manager

skyguide  
Klaus Meier  
Chief Technical Officer

### ***U-Space Service Providers***

| Company              | Name              |
|----------------------|-------------------|
| Swisscom AG          | Cyril Mugglin     |
| Wing Aviation LLC    | James Burgess     |
| Altitude Angel LTD   | Richard Parker    |
| Flarm Technology LTD | Andrea Schlapbach |
|                      |                   |
|                      |                   |

### ***Supplemental Data Service Providers***

| Company              | Name              |
|----------------------|-------------------|
| Involi SA            | Manu Lubrano      |
| Swisscom AG          | Cyril Mugglin     |
| Altitude Angel LTD   | Richard Parker    |
| Flarm Technology LTD | Andrea Schlapbach |
|                      |                   |
|                      |                   |



**Technology Providers**

| Company            | Name                       |
|--------------------|----------------------------|
| AirMap             | Andreas Lamprecht          |
| Auterion           | Lorenz Meier/Kevin Sartori |
| Altitude Angel LTD | Richard Parker             |
| Orbitalize Sàrl    | Michael Barroco            |

**Drone, GCS or Flight Control Manufacturers**

| Company                | Name                                |
|------------------------|-------------------------------------|
| SenseFly               | Raphael Zaugg                       |
| Drone Harmony          | Martin Fuchsberger/David Adjashvili |
| Aurora Swiss Aerospace | Tim Dawson-Tawnsend                 |
|                        |                                     |
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