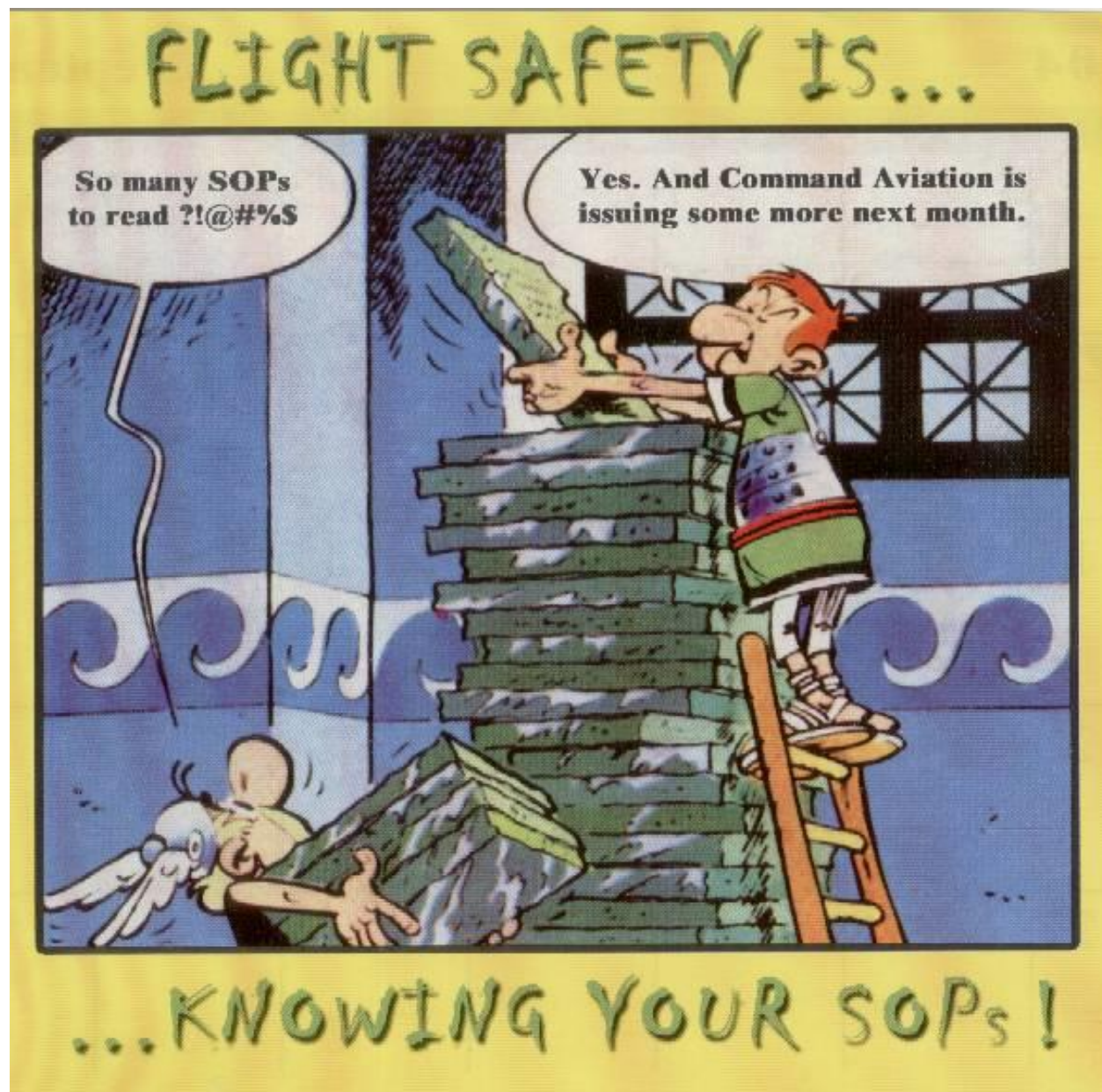




## SOP's in Aerial Work: The Swiss Way

EASA Rotorcraft Symposium, Cologne

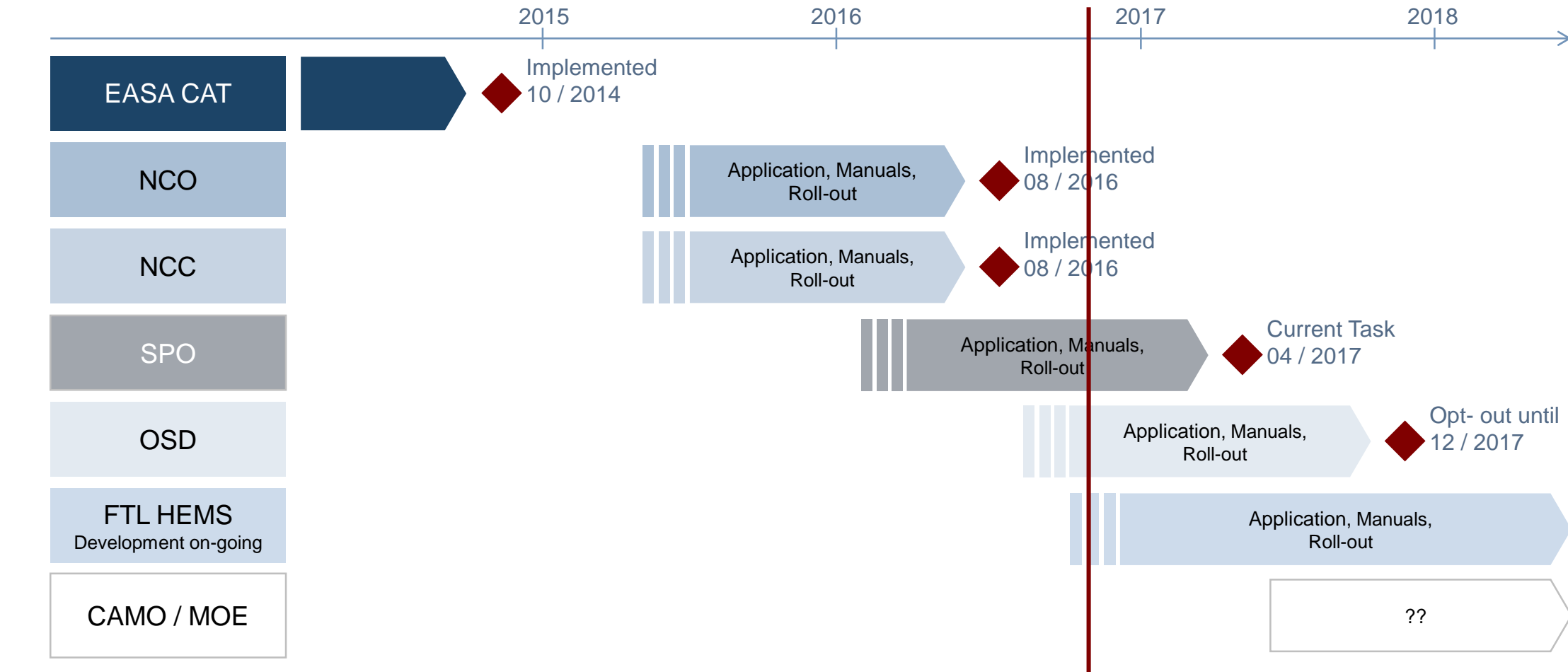


# Agenda

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1. EASA Regulation: Massive Changes for Swiss Operators
2. Mandate to Develop Common SOPs for the Industry
3. EASA Requirement: OM A-D SPO, SOP incl. Risk Analysis
4. Document Structure
5. Mini SOPs to Cover Different Types of Operation
6. Risk Analysis
7. “Competency Based” Training Philosophy
8. Timeline and Benefits for European Operators
9. Some Open Issues

# 1) EASA Regulation: Massive Changes for Swiss Operators




## 2) Mandate to Develop Common SOPs for the Swiss Industry

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Based on the same approach, a SOP working group has developed standardized SPO manuals incl. 30 Mini-SOPs in four languages. The goal is to:

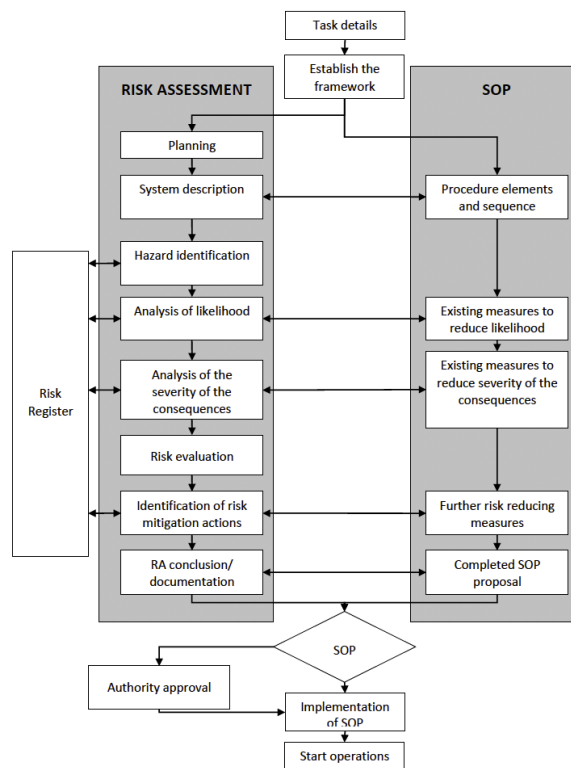
- Distribute the material to all interested parties
- Ensure harmonization across the industry regarding crew requirements and training
- Provide best in class training material to all operators to increase level of safety
- Foster close collaboration with any interested national authorities to support certification and implementation efforts



Project organized and supported by Swiss Helicopter Association (SHA) based on financial support obtained from Swiss National Authorities (FOCA)

### 3) EASA Requirement: OM A-D SPO, SOP incl. Risk Analysis

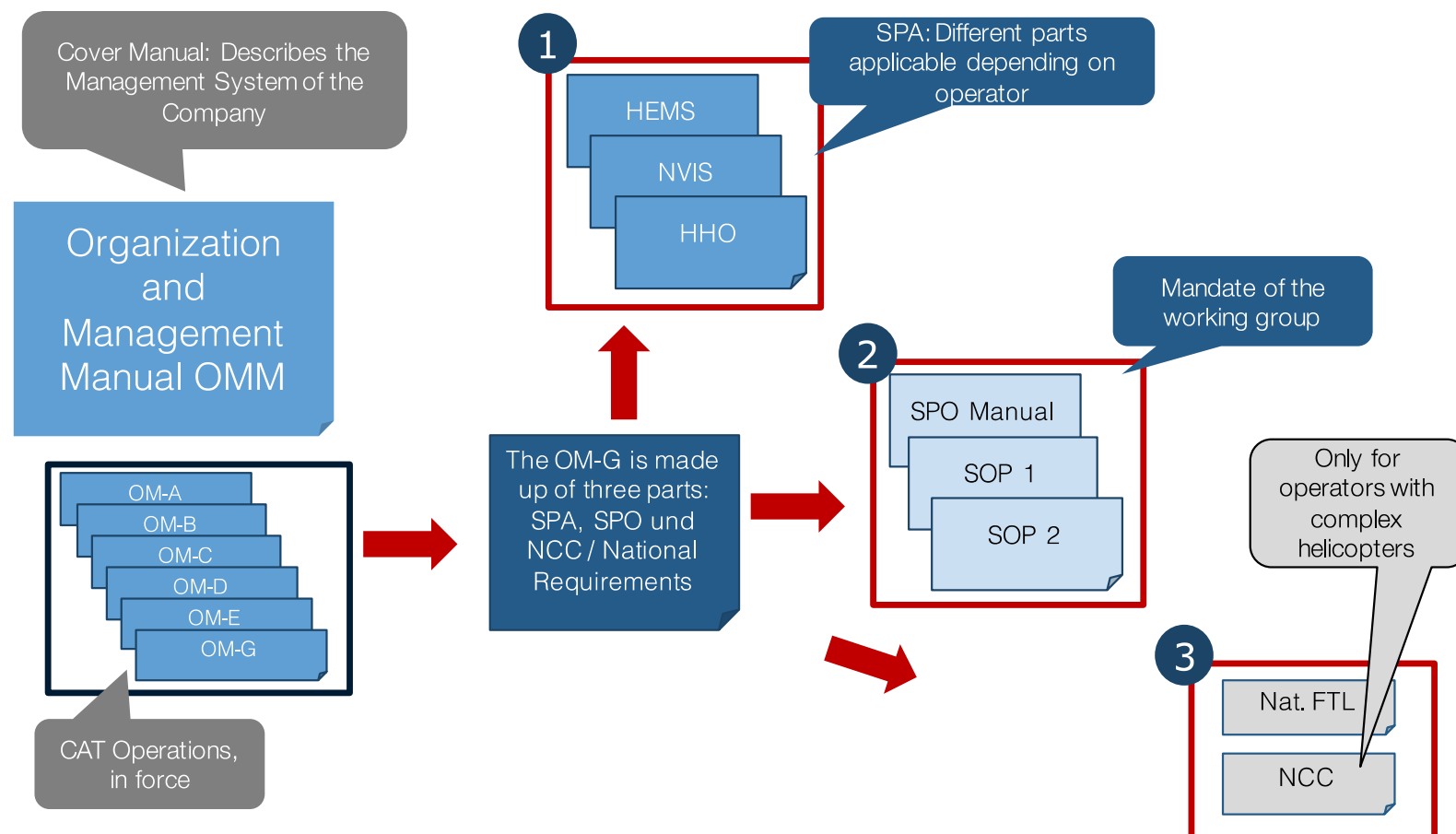
- EASA provides guidance how to develop and structure SOPs (GM1 SPO.OP.230)
- FOCA has published Guidance Material to develop an SPO OM A-D as well as SOPs



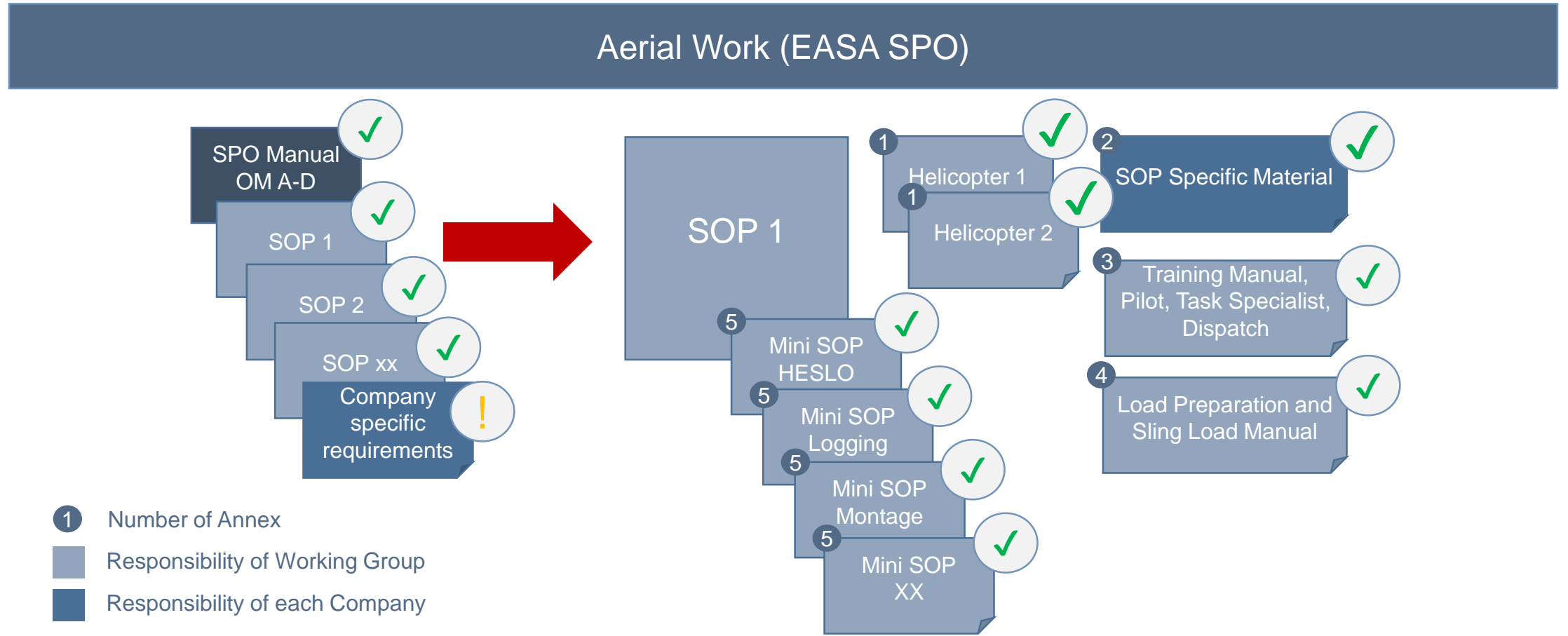


## 4) Document Structure of a “normal” Helicopter Company

- Goal: Aid users to find relevant parts of OM that are applicable in their daily work by putting all the information into separate manuals
- Maintain OM A-D structure in SPA and SPO
- Develop material that can be taken into the field and used on the spot
- Mini SOPs as collection of all relevant information of specific operation



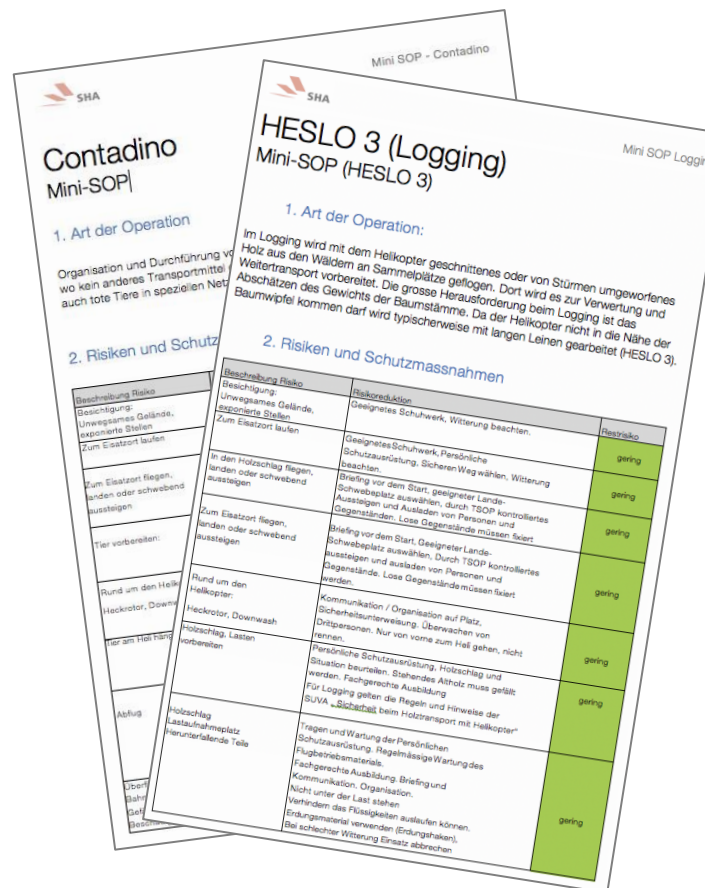
## 4) Integration of SPO in the OM-G of the companies





## 5) Mini SOPs to cover different types of operation

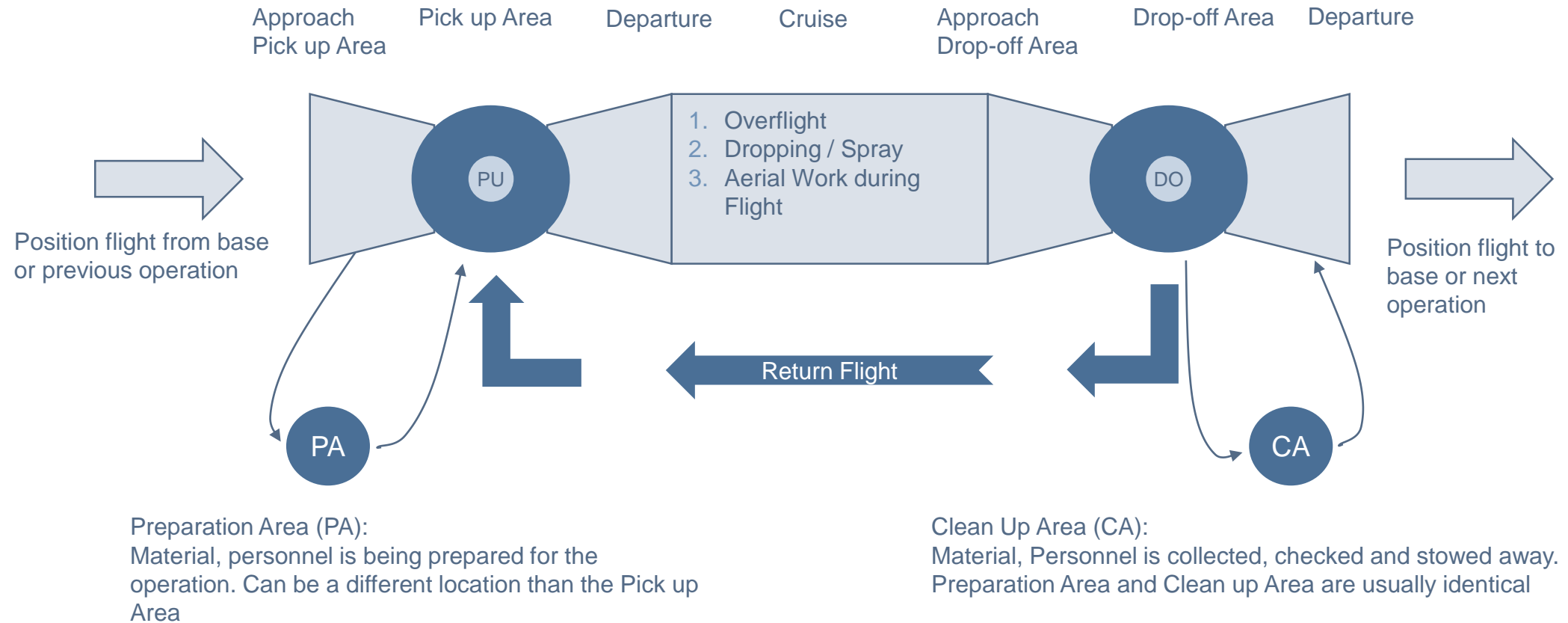
- The Master SOP covers all aspects common to all types of operation within that SOP
- Mini SOPs provide an additional level of detail focusing only one specific mission
- Mini SOP contains all descriptions, pictures, checklists and briefing information to best support the personnel involved in the mission in their job
- Both Master SOP and Mini SOP required to be compliant with EASA SPO
- Modular concept of Mini SOPs ease implementation of new missions types into company portfolio



Examples of HESLO Mini SOPs:

- HESLO 1 Shortline less than 20 m
- HESLO 1 Avalanche Control
- HESLO 1 Contadino (Transport of Animals)
- HESLO 1 Measuring flights (Radio Sounding)
- HESLO 1 Fertilization flights
- HESLO 2 Longline >20m
- HESLO 2 Firefighting
- HESLO 3 Logging
- HESLO 3 Special Logging
- HESLO 4 Construction on Ground
- HESLO 4 Construction on Platform
- HESLO 4 Cable laying
- HESLO 4 Vertical Saw
- HESLO 5 Heavy Loads

## 6) Common Elements of Aerial Work as Basis for Risk Analysis

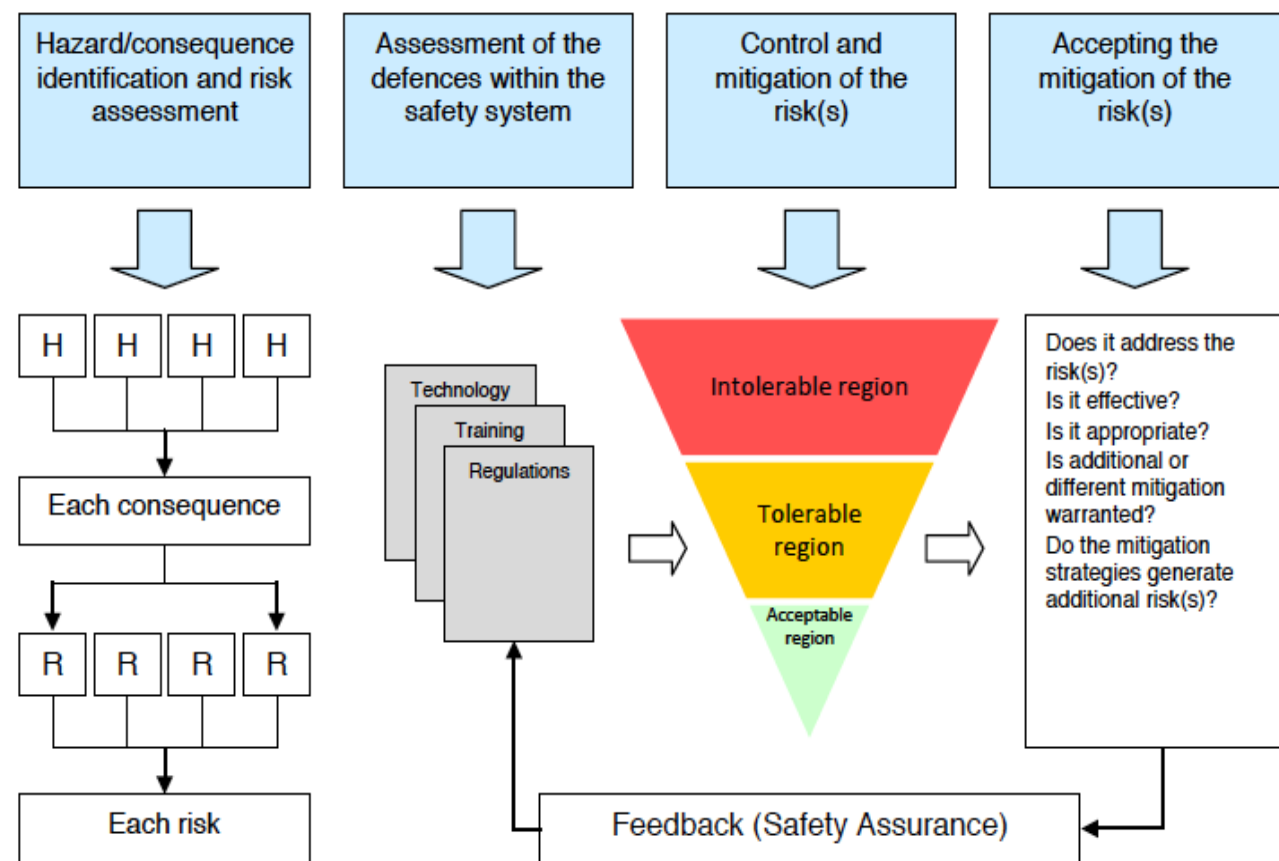


# Let's look at a SOP in Detail

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## 6) Harmonized Risk Analysis across all Areas of the Company

- Risk analysis in Swiss manuals follows the ICAO guidelines set out in Doc 9859 (2009) and not the bowtie model as laid out in the EASA Guidance Material and EHEST MARIA Tool.
- Goal was to have only one safety risk mitigation process for all operations within the company. This aligns the SMS and safety processes defined in the OMM and the aerial work operations
- Risk Analysis Database covers all aspects an helicopter aerial work operation from first evaluating the pick-up / drop-off site to putting the helicopter back in the hangar in the evening



Source: The safety risk mitigation process (ICAO DOC 9859, 2009, S. 88).

## 6) In Depth Risk Analysis to identify Key Risks for each Operation

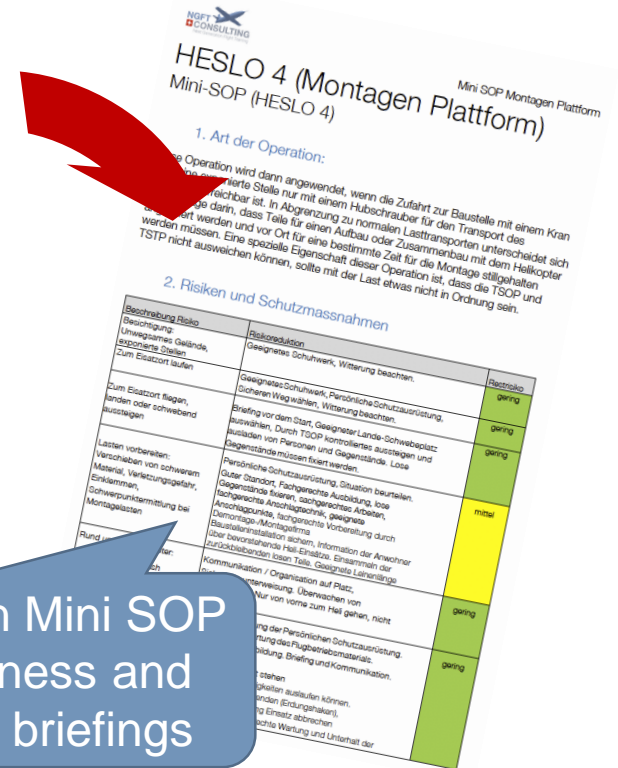
Beschreibung Risiko	Ereignis	Schaden	Eintreten	Resultat
<b>Vorbereitung, Planung, Umgebung</b>				
Installations/Organisationsplatz REKO	Autounfall (zB heikler Strassenzustand, Müdigkeit), Sturz wegen ungesicherten Treppen, Löcher, Podeste, Getroffen werden von Baumaterial von Kran oder Material	Gering	ab und zu	B3
Antennen, Stromleitungen, Windräder in der Umgebung	Touchieren Helikopter, Last mit Hindernissen	Mittel	ab und zu	C3
Schlechtes Wetter	Wettersituation kann in den Alpen sehr schnell umschlagen, Schneefall und Wolken / Nebel können sehr schnell die Sicht gegen Null, Operation in IMC mit Orientierungsverlust und	Hoch	ab und zu	D3
Betankung Heli, Basis	Auslaufendes Kerosen (Defekte Pumpenanlage / Tankbehälter, Überfüllen), Verunreinigung Grundwasser Haut und Augenkontakt mit Kerosen, Person fällt beim betanken vom Heli, Fahrzeuge Dritter beschädigen, Beschädigung Tankschlauch.	Mittel	selten	C2
Tageskontrolle, Flugbereitschaft	Person rutscht aus (Glatteis, Schmiermittel, Öl, Abdeckung), fällt vom Heli und verletzt sich, Verbrennungen (heiße Turbinenteile), Beschädigung des Hells durch vergessene Werkzeuge, Putz-Schmiermittel, Schnittverletzung durch scharfkantige Teile	Mittel	selten	C2
Fahrzeuge	Unfall zum Teil durch Kombination der auslösenden Faktoren	Hoch	ab und zu	D3

Hazard Identification and Evaluation

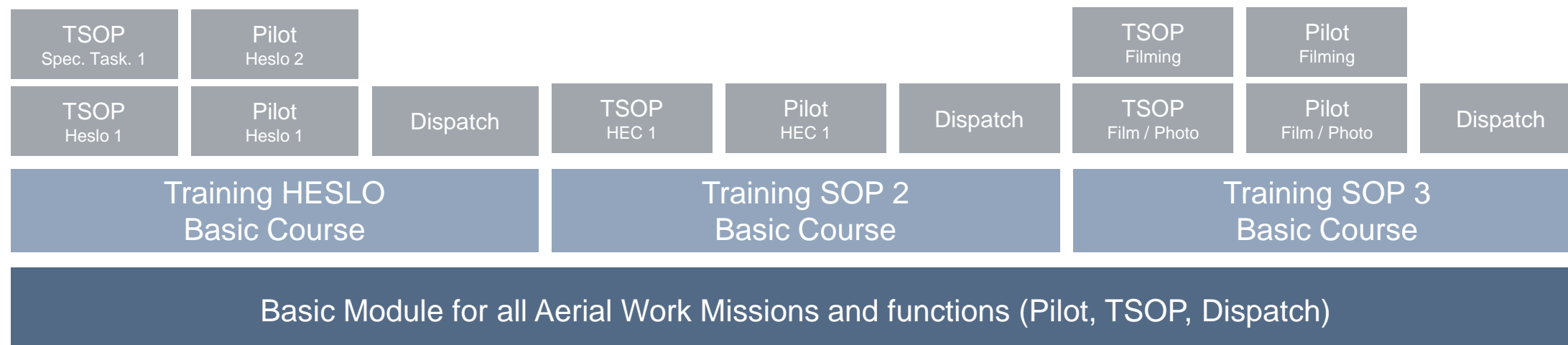
Beschreibung Risiko	Risikoreduktion	Restrisiko
<b>Vorbereitung, Planung, Umgebung</b>		
Installations/Organisationsplatz REKO	Genügend Zeit für REKO einplanen, Persönliche Schutzausrüstung, Winterausrüstung Fahrzeuge, Der Situation angepasstes Verhalten	gering
Antennen, Stromleitungen, Windräder in der Umgebung	Genaue Fesetlegung Flugweg, Detailliertes Briefing an Besatzung	gering
Schlechtes Wetter	Alle Besatzungsmitglieder sind für die Beobachtung der Wetterverhältnisse verantwortlich. Es muss immer ein Ausweg vorhanden sein. Jedes Besatzungsmitglied hat Vetorecht für den Abbruch der Operation.	Mittel
Betankung Heli, Basis	Barriere schliessen, Flughelfer, Mechaniker macht kontrollierte Betankung, Drainen, Fachgerechte Ausbildung, Sicherheitsabstand Dritter zum tankenden Heli einhalten	gering
Tageskontrolle, Flugbereitschaft	Überlegtes, der Witterung angepasstes Arbeiten, Saubere, trockene Schuhe (Rutschgefahr), Doppelkontrolle (Werkzeug, Putz-Schmiermittel, Persönliche Ausrüstung), Fachgerechte Ausbildung.	gering
Fahrzeuge	Genügend Reisezeit einplanen, Organisation und Planung der Fahrt, Instandhaltung der Fahrzeuge, Instruktion und Kontrolle des	mittel

Risk Mitigation Measures and Residual Risk

Quick Checklist in Mini SOP to trigger awareness and support mission briefings



## 7) „Competency Based“ Training Philosophy




- The working group has developed a competency model that defines what a team member needs to master in order safely perform his role
- The Basic Module is identical for all roles and includes topics such as Working around the Helicopter, SMS, Company Introduction, etc...  
The goal is to define and obtain a minimum standard for all people involved
- For each SOP there is a series of competency levels. One level has be mastered before a team member can move to the next (e.g. HESLO 1 -> HESLO 2)

## 8) Timeline and benefits for European Operators

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- All SOPs completed (6 SOPs, incl. 23 Mini SOP), submitted to FOCA for review
- All material finalized and signed-off by FOCA end of December 2016
- Training Material available by YE 2016 for implementation during spring 2017
- Before documents will be handed over to a company, a small evaluation of the current status of the company will be made to avoid ill use of material

- 
- Once signed off by the Swiss National Authorities (FOCA), these documents will be made available to all interested parties
  - Reduced costs thanks to financial support of Swiss Authorities
  - Swiss Helicopter Association (SHA) is primary point of contact for obtaining these documents



## 9) Some Open Issues

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- SPO operators no longer receive an AOC certificate (but commercial activity standard)
- What is an High-Risk Operation or a Marginal Activity (PARA)
- Harmonized application of various NAAs regarding Risk Analyses and Mitigation Measures
- Cross-Border approval process and acceptance of permissions granted by state A in state B
- How to deal with different labor and safety laws. Operations are performed partially on the ground
- Are SPO Operators still able to request fuel tax reduction (no longer AOC)?



Thank you for your attention

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