

# THE ULTIMATE SORA GUIDE TO DETERMINE YOUR SAIL!

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## ABOUT THE AUTHOR

Before founding UASolutions, Nathanel Apter worked for the Swiss Federal Office of Civil Aviation (FOCA) for several years.

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## PRELIMINARY REMARKS

This document is based on the best practices (see section 11 References) of the Swiss Federal Office of Civil Aviation (FOCA), the Direction Générale de l'Aviation Civile (DGAC) in France and the Luftfahrt-Bundesamt (LBA) in Germany. This guide gives an understanding of the ground risk, air risk, and the risks in adjacent areas and airspaces. Furthermore, it provides a step-by-step approach to establish the Specific Assurance and Integrity Level (SAIL) using the Specific Operation Risk Assessment (SORA) methodology. The SORA is the European Aviation Safety Agency (EASA) acceptable means of compliance (AMC) to Article 11 of the EU Reg. 2019/947 and is widely used in the specific category<sup>1</sup> to obtain an operational authorisation from the aviation authorities in the rest of the world.

In aviation, the high safety level essentially consists in certification of the design and production as well as the verification of the organisation, the maintenance and the pilot competencies. It is a complex and costly process. For many operations, certification of the unmanned aircraft system (UAS) is not economically feasible. Therefore the SORA methodology offers the possibility to adapt the technical and operational requirements to the risk inherent to the operation. If it is not possible to demonstrate that the UAS is either harmless and/or reliable, it will be possible to operate at the cost of operational constraints. If it is necessary to get rid of the operational constraints for the operations, then it will be required to demonstrate a high level of reliability or the

harmless character of the UAS.

This document has been written to provide guidance on how to find the risk of the operation and therefore the requirements with which to comply for the operation (Operational Safety Objectives). Despite the fact that this is a guide, the exact application of this methodology depends on the foreseen operations and the civil aviation authority interpretation of the SORA concept and safety objectives. Lastly, note that this document does not provide guidance regarding how to comply with the Operational Safety Objectives (OSOs) or any requirements arising from the SORA methodology.

## 1. THE CONCEPT OF OPERATION

The Concept of Operation (ConOps), which is the applicant's essential document, will need to be developed according to the level of detail required by the final SAIL. As ConOps and SAIL are strongly related, we recommend creating a ConOps starting with a basic operation description and refining it with further level of detail as the SAIL of the operation is finalised following Annex A guidance provided by EASA (EU Reg. 2019/947) or the LBA guidance (LBA, Formulierungshilfen zur Erstellung eines Betriebshandbuchs/OM/ConOps für den Betrieb von unbemannten Luftfahrzeugen, 2022).

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<sup>1</sup> The specific category covers UAS operations above or nearby people, above 120 m AGL, with UAS heavier than 25 kg or complex operations in BVLOS or involving UA Swarms.