



**Joint Authorities for  
Rulemaking on Unmanned  
Systems**

# **JARUS guidelines on SORA**

## **Explanatory Note for PDRA-02 version 2.0**

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## NOTE FOR THE READER

JARUS published the document Standard Scenario STS-02 in September 2019. JARUS choose to define this document as a standard scenario (STS). The STS definition does however in some countries imply an approach in which an UAS operator can declare compliance and thereafter start operating without further interaction with the Competent Authority. Since the STS-02 was intended for the basis of an application rather than a declaration, JARUS has adopted the Predefined Risk Assessment (PDRA) definition in following documents published. In the remainder of this paper, PDRA-02 version 2.0 implies an updated version of STS-02.

This paper contains:

- (a) A general description of the main changes introduced in PDRA-02 version 2.0 which is an update of the original STS-02;
- (b) The rationale for the update;
- (c) The scope of consultation for PDRA-02 version 2.0

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# 1 Introduction

This document is an explanatory note for major changes introduced with the PDRA-02 version 2.0. The changes were developed by JARUS WG SRM considering the lesson learned from the five PDRAs which JARUS has published so far and adaption of the PDRA to the new version 2.5 of SORA.

## 2 New concept for PDRAs

PDRAs have been developed by JARUS as an example of how to apply the SORA to ease the burden of the applicant and for the authorising authority, by providing a complete risk assessment for a defined type of UAS operation. While the PDRAs have been recognized as a valuable contribution in understanding how to apply SORA, the PDRAs have also been described as providing to little flexibility in adapting the type of operation without exceeding the limits of the PDRA. In many cases applicants have therefore adapted the type of operation based upon a PDRA and submitted it under a full SORA to have their specific type of operation covered. Further, the use of the published PDRA's has shown only a small amount of resource saved for the applicant, since the existing PDRA's still requires development of a full Operations Manual (OM) supporting the application without any guidance how to do that.

The JARUS SRM has therefore been evaluating options to improve the usability of the PDRAs and this has led to a new concept which is now consulted for feedback by all relevant stakeholders. The PDRA-02 has been selected as the first PDRA to get feedback on this new concept and if the consultation provides positive results, the concept will be extended to update remaining published PDRA as well as new PDRA's in development.

In the old format each PDRA was defined by an extensive list of requirements, with which an applicant had to demonstrate compliance. These requirements were based upon the risk assessment for the type of operation following the SORA methodology. This extensive list of requirements made sure an operation would be compliant with the underlying risk assessment. Some of the requirements would have been better characterised as guidance, but once defined as requirements in the PDRA, they should be complied with. This approach led to a very inflexible definition of the operation.

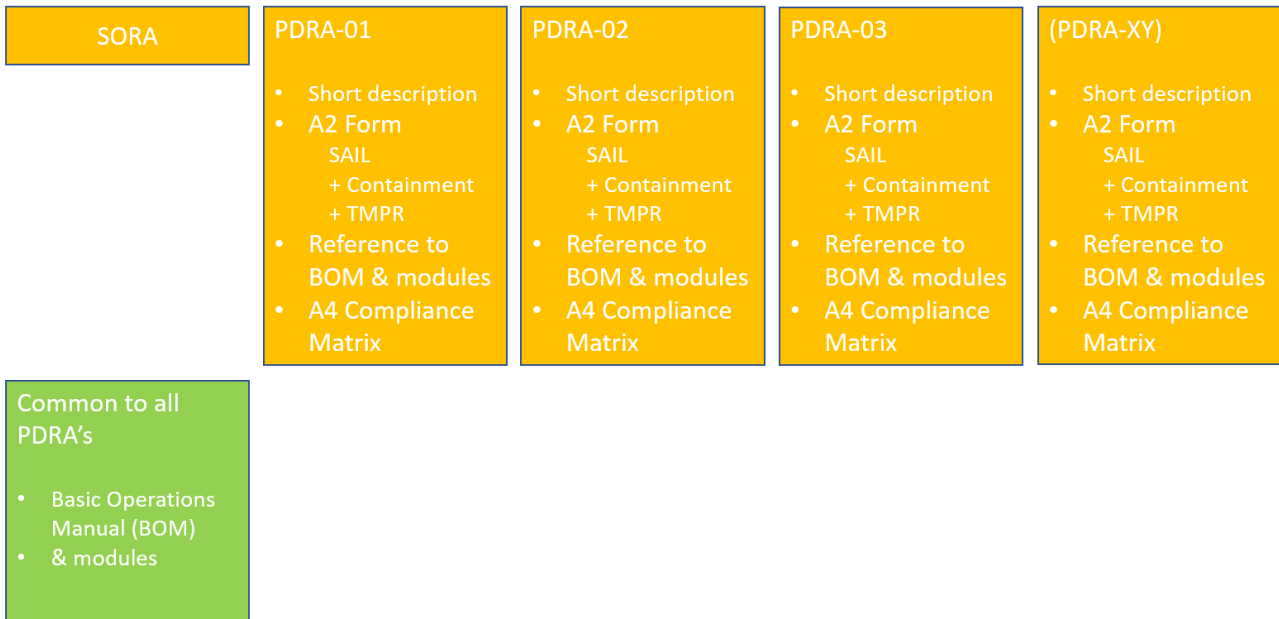
The first simplification consists in the development of a Basic Operations Manual (BOM) that is part of the consultation package. This BOM has been developed considering an operation conducted in accordance with SORA and it is ready for use after being complemented by the modules for this PDRA-02 version 2.0, with a limited set of specific information to be provided by the operator.

In the new approach a PDRA will consist of two elements:

- (a) A general description of the operation (introduction and scope), a predefined Risk Assessment of this outlined operation (A2 form), a list of documents (BOM & modules) that are needed to get a full OM as well as a compliance Matrix (A4 Form) referencing all evidence.
- (b) Guidance that is used for each PDRAs and allows the operator to create a full Operations Manual for the specified PDRA. The guidance consists of a Basic Operations Manual and a full set of modules for all necessary modifications required to cover each specific PDRA. This will provide examples on how to comply with the requirements of each PDRA.

To support multiple PDRA's, a single BOM relevant for all PDRA is envisioned and this BOM will be supplemented by relevant needed modules for each PDRA. Examples of modules relevant for PDRA-02 version 2.0 is BVLOS in reserved airspace, M1(A) mitigation using shelter providing guidance on how to integrate these aspects into the basic BOM.

The new PDRA concept is illustrated below.



### 3 SORA 2.5 update to PDRA-02 version 2.0

At the same as the new PDRA concept has been defined, SORA has been updated to version 2.5.

When developing PDRA-02 version 2.0, it was therefore decided to also update the PDRA to be compliant with SORA 2.5. This means the new version of the PDRA is the same type of operation as the original PDRA with the requirements adjusted as needed due the differences between SORA 2.0 and 2.5.

### 4 Basis for consultation of PDRA-02 version 2.0

The purpose of the consultation of PDRA-02 version 2.0 is to receive feedback on the new format from all relevant stakeholders to determine the suitability of the format and receive inputs for improvements.

The purpose of the consultation does not include receiving feedback of the basic scope of the PDRA. As described above, the new version of the PDRA is derived from the original version adjusted to SORA 2.5 without changing any requirement. Comments to change the scope of the PDRA will not be accepted.

If, after the consultation, this approach will receive a positive feedback, the same will be applied to the other PDRA's by developing for each of them a 'Operation characterisations and requirements' and a number of 'OM modules' as needed.