

Slido: #IAM2024



EASA

Innovative Air Mobility
Implementation Forum

In cooperation
with:



Technical changes to UAS: modification policy for SORA medium risk operation



Moderator
Stefan RONIG
EASA



Panelist
David COMBY
Organization, Position



Panelist
Tanguy Brisard
Thales



Panelist
Kevin Houston
Manna

Workshop: Technical changes to UAS - Modification policy for SORA medium risk operation

Objectives:

- Identify needs and challenges for operators, manufacturers and authorities
- Discuss options for control, verification and release of modification to UAS operated in the medium risk

What are technical changes changes to UAS?

Hardware

Software

Performance

Procedures



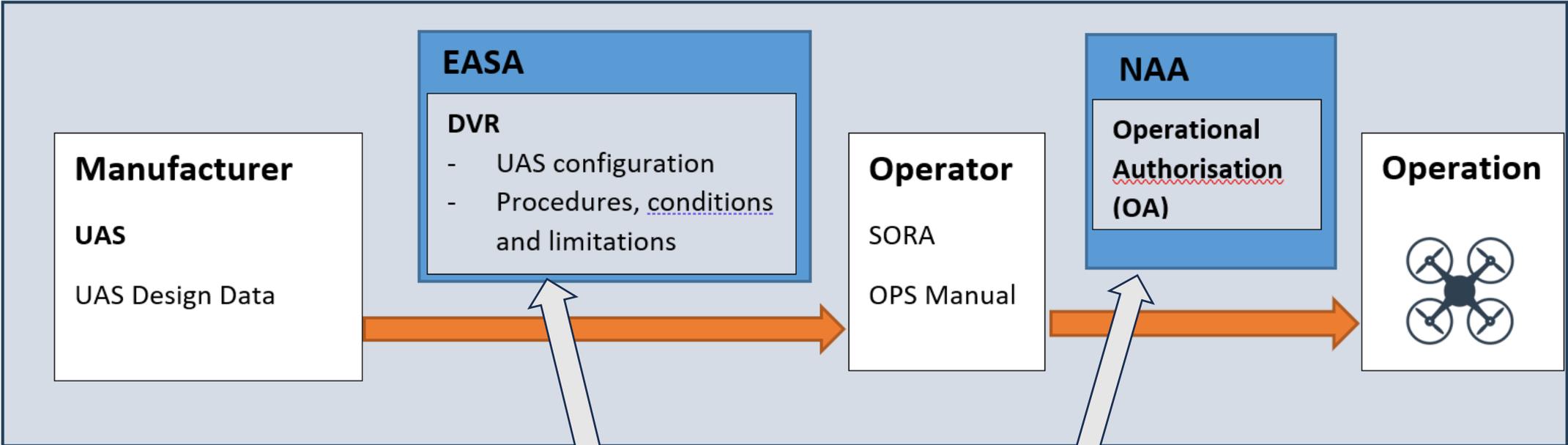
CMU

Payload type?

External Services?

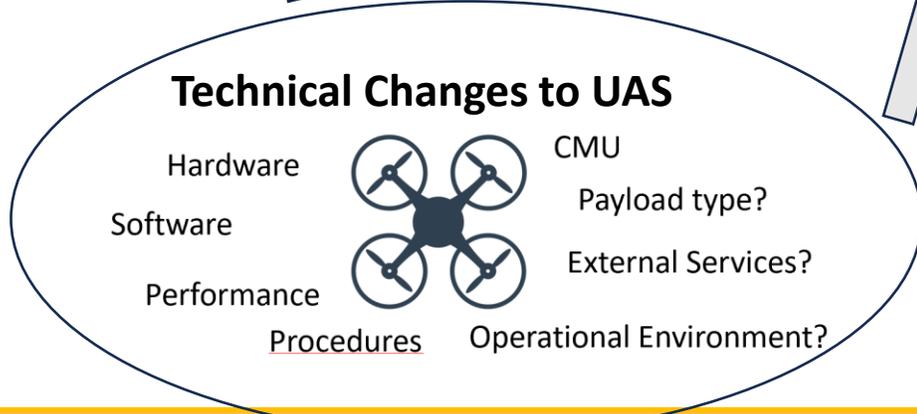
Operational Environment?

How does a technical change affect the DVR/OA?



New DVR?

New OA?



Challenges

- Dynamic industry and technological development
- Authorisations rely on frozen configuration
- No manufacturer privileges for approval of modifications
- Special cases Software/Firmware changes, Research&Development, ...

UAS Technical Changes

Kevin Houston

President Drone Alliance Europe

& Head of Regulation MANNA Drone Delivery



Who is MANNA?

- Founded 2019 - Bobby Healy (Serial Entrepreneur)
- Relies on Private investment
- 120 employees in 6 countries (mainly Ireland)
- Designs its own automatic Drones (55 Engineers)
- Manufacturers its own Drones
- Operates its own Drones
- LUC from IAA in April 2021



UAS Technical Changes

Big impact for a company as:

- MANNA is the Designer
- MANNA is the Manufacturer
- MANNA is the Operator

“Nascent Industry” – Need to constantly iterate



Challenges

- Speed of assessment by competent authorities
- Technical competence availability in NAAs
- Frequency of modifications in a developing industry
- Minor & Major Modifications - Proportionality



MANNA

- Has held LUC since April 2021
- Mature SMS in place
- Mature Management of Change in place
- Mature Configuration Control
- UK CAP722G and follow up use of 722G very useful



DVR – UAS Technical Changes

- Clarity on implications of Technical Changes
- Clear guidance on Minor and Major changes and the actions required for each of these situations
- Methodology to allow pace for iteration in the industry without compromising Safety



Future

- MANNA would like more flexible requirements post-DVR i.e. to allow defined technical modifications without the need to “Begin again”.
- MANNA would like clear guidance on “Minor” & “Major” changes and specify exactly what would required to amend an existing DVR.
- MANNA Designers would like clarity around the implications of Technical Changes to a DVR to allow better management of changes in MANNA.



Technical changes to UAS: modification policy for SORA medium risk operation

Thales Contributions

www.thalesgroup.com



Thales UAS projects

> SORA Medium Risk:

- ▶ UAS AVE300 Scaleflyt SAIL III (DVR Granted APRIL2024)
- ▶ UAS100-1 SAIL IV



Not under Part21:

- POST DVR change classification not allowed
- EASA new DVR required for each evolution

> SORA High Risk:

- ▶ UAS100-10 SAIL VI (Under PART21)



DOA privileges allowing:

- POST Type Certificate change classification
- Minor Change approval (No EASA involvement)

Thales UAS SORA Medium Risk – POST DVR Change - Needs

> Examples of potential changes after initial DVR

- › Regular SW update (Cyber countermeasure)
- › Obsolescence Issue (HW having potential SW impact)
- › Product improvement (Structure, battery, engines, function,...)
- › Operational limitation improvement (without HW nor SW change)
- › Bug fixing

> Demonstration level is identical whatever the POST DVR change classification (minor or MAJOR)

> If each POST DVR change requires systematically a new DVR then:

- › Rapid deployment of Minor Design changes will not be possible and could lead to AOG
- › Other DVR project will be impacted (EASA lack of resources)

> Minor / Major Classification criteria should be defined in the initial DVR project and applied for POST DVR changes

Questions to the Panel

Kevin: What is driving the need to change the UAS after the operation is authorized with a specific UAS and what is needed for the operator?

Tanguy: What kind of technical changes to UAS are happening most often after the initial design release or DVR and what is needed for the manufacturer?

David: What are the challenges for the authority related to changes to the UAS configuration, what is expected from Manufacturers and EASA?