



UAV payload testing in Dominican Republic - Process and key learnings -

Webinar, 22nd August 2018

hosted by

UAV's for Payload Delivery Working Group



Agenda

General overview

- Why this project
- Key characteristics
- Approach

Specific topics and potential learnings for Working Group

- Clearances for equipment
- Stakeholder involvement
- UAV testing environment preparation, SORA and safety

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Why? To bridge the last mile in humanitarian logistics!



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Equipment

DLR superARTIS UAS + Wings for Aid delivery system



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DLR Flight Test Carrier "superARTIS"

Based on SwissDrones SDO 50



Overview

Unmanned helicopter with intermeshing rotors

Fully autonomous flight including start and landing

Special safety equipment: termination link, safety pilot

Technical Specification

Gross weight up to 85 kg

Rotor diameter 2,8 m

Endurance around 1 h

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Custom Dropping Mechanism and Landing Gear

Designed and built by Wings for Aid

Manually triggered (radio controlled)

Independent from helicopter avionics system

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Project locations in Dominican Republic Jimani and Bajo Yuna area



<https://dominantoday.com/dr/local/2013/06/04/lake-enriquillo-swelling-floods-more-than-18000-hectares-bishop/>

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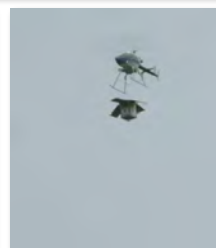
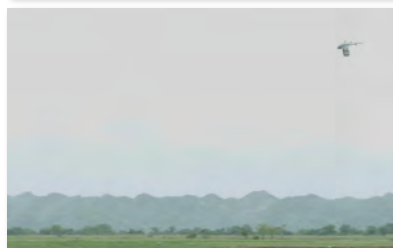
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Statistics of the pilot operation Dominican Republic, June 2018



Flight Days:	5
Furthest distance:	6 km
Total number of flights:	19
Total flight time:	4:35h
BVLOS flights:	11
Flight speed:	15 m/s
Total number of drops:	17
Max payload:	22 kg



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Topic: clearance of equipment import/export and documentation



Learning by doing:

- Alliance with logistical partner (Rhenus)
- Packing lists with reference labels
- Certified packing of dangerous goods
- Pre-clearance based on AWB+docs+letters
- Pictures, and.. Video's

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Topic: stakeholder involvement Civil, military, IO, NGO, local and.. beneficiaries



Learning by doing:

- Define core team and layers around it
- Perform pathfinding mission(s)
- Agree on essence and headline agenda
- Briefings for all involved
- Stay curious, keep listening

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Topic: UAV testing environment

Preparation, SORA, safety



Preparation process

Needs > Desk > Pathfinding > Plan >
Check > Approval > Inform stakeholders



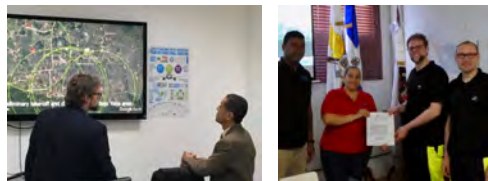
SORA methodology applied

Assess risk in the operation, derive means to assure safety, document and align with CAA

Some of the safety measures

Within radio line of sight, below 100m
Termination link installed
Visual observation of dropping area and road blocks

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Next steps towards scale-up

Reporting to WFP CO, Aviation and Innovation Accelerator

Learn and adjust road map for Wings for Aid Mini Freighter (100kg, 500km)

Identify other pilot projects

Share the experience ;-)

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Thank you!



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