EASA on Vertiports design developments
ICAO 22SAMHELI
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Vertiports (VPT) – Why?

- Several VTOL capable aircraft are already in the certification process,
- Planning and investment on vertiports are happening today to start operations in the next years,
- Specifications for VTOL capable aircraft and VPT design requirements should be aligned,
- EASA Management Advisory Body (MAB) concluded:
  - VPT design requirements are of common interest of EU Member States,
  - EASA to develop guidance for VPT design,
  - Member States can use this guidance for the national regulatory framework on vertiports (1st step).

Vertiports background

- **EASA Vertiports Task Force (VPT TF):** NAAs, aerodromes and vertiports operators, VTOL aircraft manufacturers, experts and EASA staff (48 members),
- Baseline: EASA CS/GM for heliports, ICAO Annex 14 – Heliports, Doc 9261 Heliports Manual and inputs received from VTOL manufacturers.

Vertiports (VPT) in two steps

1st step, Q1/2022: Prototype Technical Specifications (PTS)

- → Non-regulatory material for the design of vertiports for operations of VTOL capable aircraft under VFR conditions, certified in enhanced category,
- → PTS Content: Vertiport applicability and definitions, vertiport data, vertiport physical characteristics, obstacle environment, visual aids, en-route alternate vertiports for CSFL, (RFFS); (Published, 24 March 2022)

2nd step, 2023/24: VPT Regulations as Amendment R139/2014

- → Full package of regulations for VPT within the scope of Basic Regulation:
- → Content: Implementing rules, Authority Requirements (AR), VPT Operator Requirements (OR), VPT Operations (OPS) Requirements; CS & GM;
- → Part of the RMT.0230 Drones program.

Vertiports PTS-VPT-DSN

- Unique opportunity to develop safe infrastructure requirements from scratch.
- Innovative approach in UAM mobility.
- The world's first specifications for vertiport design.

PTS – Prototype technical specifications (available to download at this link)
VPT – Vertiport
DSN - Design

PTS-VPT-DSN Content:

Letter to UAM manufacturers

Chapter A: General
- applicability
- definitions

Chapter B: Vertiport data

Chapter C: Physical characteristics

Chapter D: Obstacle environment
- (conventional) OLS surfaces
- obstacle free volume

Chapter E: Visual aids
- markings and markers
- lights

Chapter F: En-route alternate VPT CSFL

Chapter G: Emergency procedures and RFFS (input data needed!)

PTS-VPT-DSN Content:

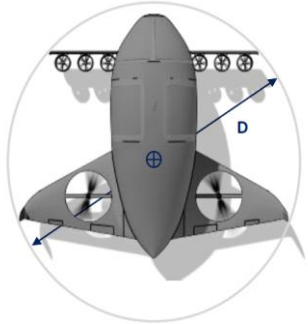
Chapter A: General

PTS VPT-DSN.A.010 Applicability: PTS is non-regulatory material for the design of VFR vertiports or parts thereof and are applicable for operation of manned VTOL-capable aircraft certified in the enhanced category.

PTS VPT-DSN.A.020 Definitions:

Mostly taken and amended from EASA CS-HPT-DSN and ICAO Annex 14 & Doc 9261.

- **'Vertiport'** means an area of land, water, or structure that is used or intended to be used for the landing, take-off, and movement of VTOL-capable aircraft.
- **'D', for VTOL aircraft**, means the diameter of the smallest circle enclosing the VTOL aircraft projection on a horizontal plane, while the aircraft is in the take-off or landing configuration, with rotor(s) turning, if applicable



PTS-VPT-DSN Content:

Chapter B: Vertiport Data

- The Chapter B is drafted with reference to and based on ICAO Annex 14, Volume II, Heliports and ICAO Document 9261, Heliport Manual.

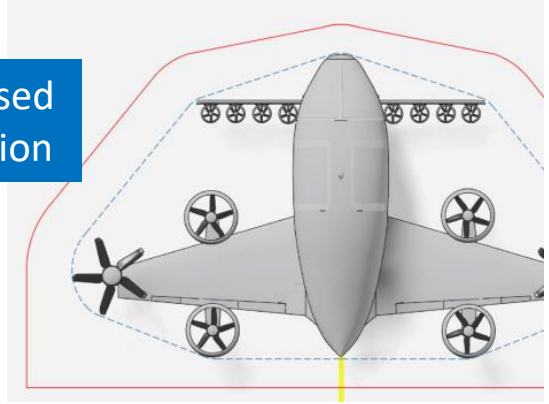
- Coordination with the competent authorities and the aeronautical information services (AIS) are at this stage at the discretion of the national competent authorities (NCAs) of the Member States.

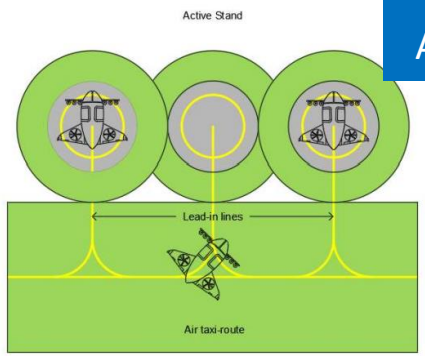
PTS-VPT-DSN Content:

Chapter C: Physical Characteristics

- No more than one VTOL-capable aircraft is in the FATO at the same time,
- Concept of building blocks,
- When simultaneous VTOL-capable aircraft operations are required, appropriate separation distances between FATOs need to be determined,
- For different VTOL-capable aircraft characteristics and performances a combinations of aerodrome and heliports requirements are provided,
- D-value & geometry based stands.

geometry based parking position





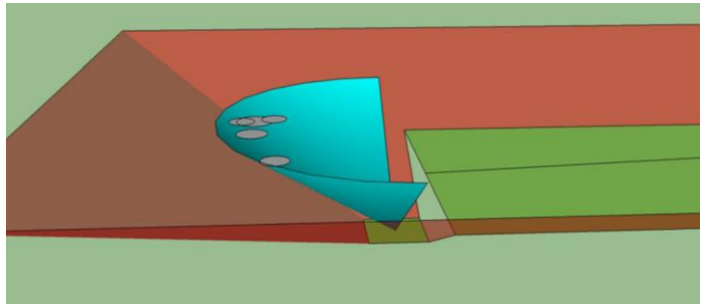
apron design
Annex 14 Vol I & Vol II

PTS-VPT-DSN Content:

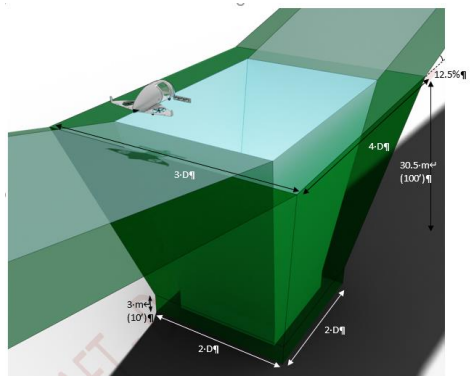
Chapter D: Obstacle Environment

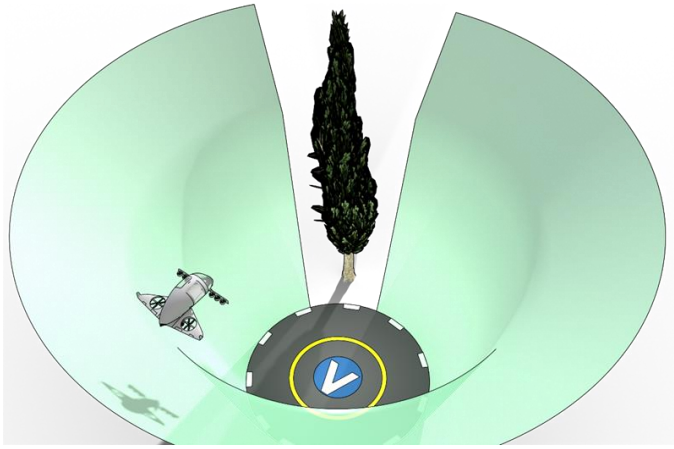
- The objective of this Chapter is to describe the airspace around vertiports in order to permit safe VTOL-capable aircraft operations.

- **Subpart 1** refers to the (conventional) Obstacle limitation surfaces (OLS),



- **Subpart 2** refers to the (new) concept of the ‘obstacle-free volume’.

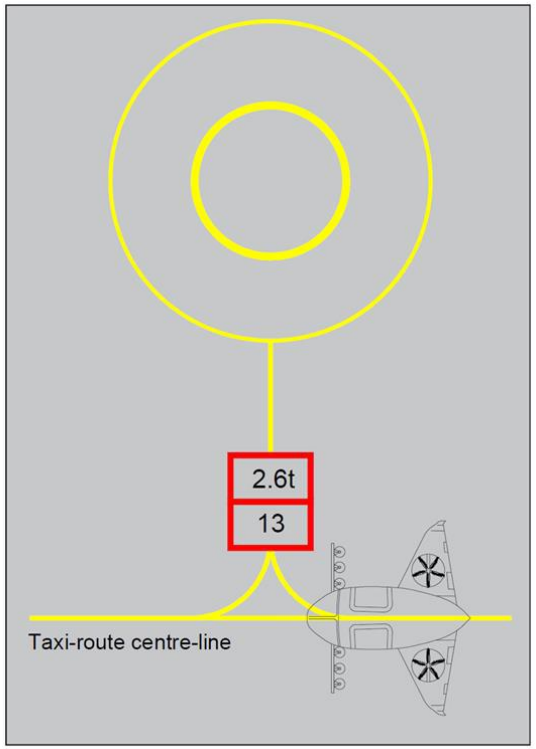


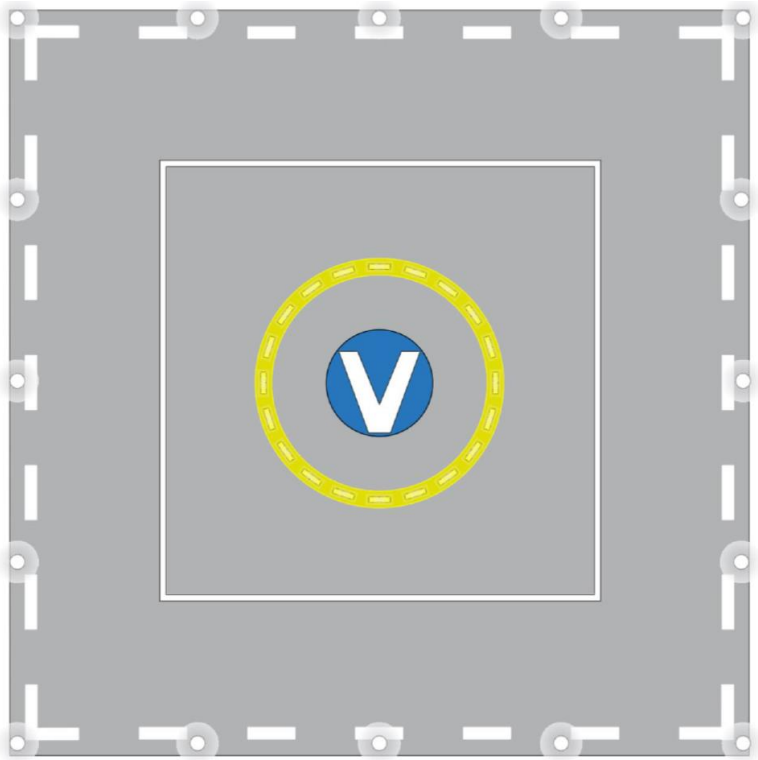


PTS-VPT-DSN Content:

Chapter E: Visual Aids

Vertiport Marking, Markers and Lights (updated Heliport specifications)

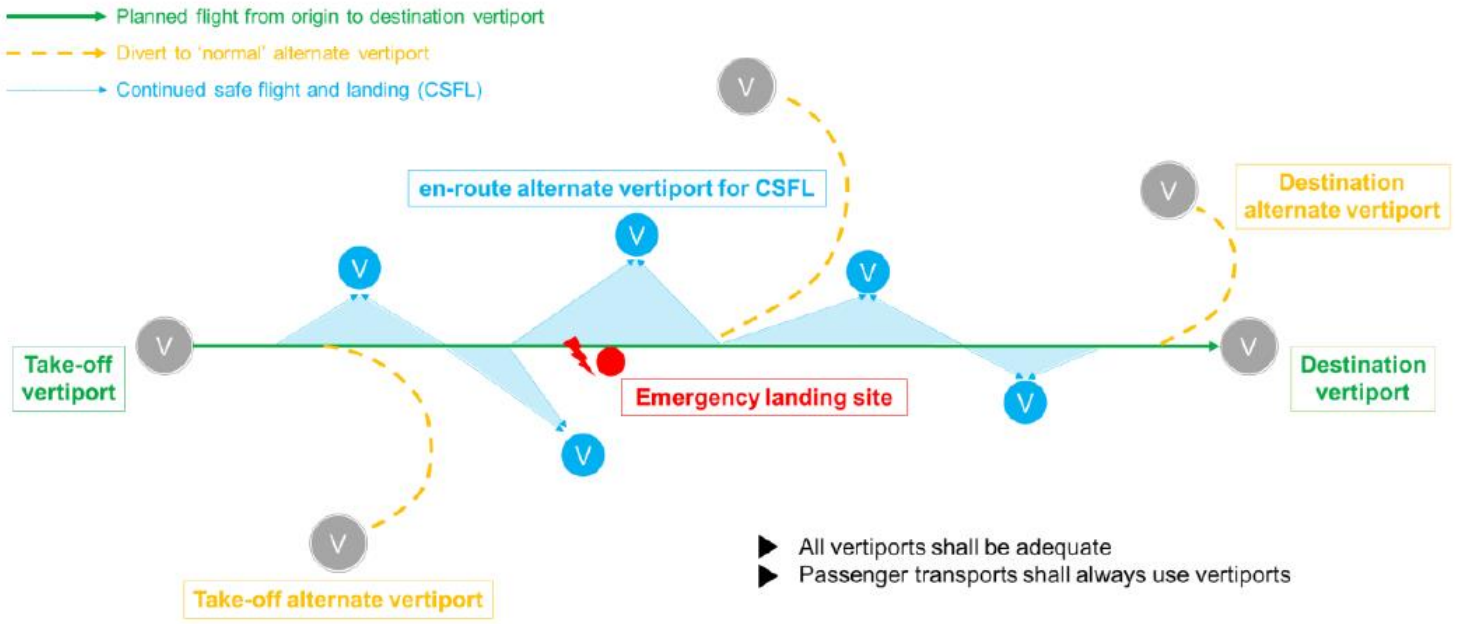




PTS-VPT-DSN Content:

Chapter F: En-route alternate vertiport

A VTOL-capable aircraft that are certified in the enhanced category would have to meet requirements for continued safe flight and landing (CSFL) and be able to continue to the original intended destination or a suitable alternate vertiport after failure.[1]



[1] EASA (2019), Special Condition for small category VTOL aircraft

CONCLUSIONS:

- → PTS are provided to support VPT operators, designers & urban planners;
- → VTOL capable aircraft characteristics should be further tested & verified;
- → PTS represents a basis for further developments of VPT requirements in the 2nd step;
- → Setting VPTs in urban environment will be a challenge to local spatial planning authorities;
- → Next rulemaking step to cover VPT certification, registration, data publication, oversight;
- → CAAs should plan resources, competences, trainings on VPT;
- → EASA is committed to further coordination with ICAO towards global harmonization on VPT requirements.

EASA
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Thank you!

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Your safety is our mission.

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