

# Nyheter i SPA-HEMS 15 maj 2024

Nyheter som diskuterades med EASA i Helicopter Expert Group (HEG) 2022-03-30

## A NEW DEFINITION OF HEMS to include RESCUE OPERATIONS OTHER THAN SAR

- **RESCUE OPERATIONS OTHER THAN SAR** to be included in the **definition of HEMS**
- Only under **emergency situations**.
- Member States may use the provisions of art 1 of the Basic regulation (scope) to define such operations as 'state or similar'
- Member States may also **OPT IN**

## **NEW SCOPE OF HEMS : EXAMPLES of EMERGENCY rescue operations**

- **Extraction of un-injured rock climbers from cliff or of exhausted mountain climbers from mountains.**
- **Provision of supplies to mountain climbers in distress**
- **Chairlift evacuation:**
  - If rescued people are carried to safety by helicopter
- **Provision of supplies / dogs / non-medical helpers to an avalanche rescue operation**

# REMAIN EXCLUDED FROM THE NEW SCOPE OF HEMS : EXAMPLES

NON-URGENT inter-hospital flights (CAT air ambulance)

SAME AS PREVIOUS SLIDE: if NOT URGENT. (CAT air ambulance)

Evacuations of injured persons from the ski slope to the ski resort village: If light injury and non-urgent, e.g. might be carried out by snow-mobile. (CAT air ambulance)

**Chairlift evacuation:**

If the helicopter only carries a mountain technician with hoist or cargo sling, and the rescued people abseil down to the ground. (SPO)

# HEMS HEC OPERATIONS

## AMC1 SPA.HEMS.130(e)

Applicable from 25 May 2024

## HEMS HEC OPERATIONS AMC1 SPA.HEMS.130 (e)

- **USE OF HOIST IN HEMS: SPA.HHO applies.**
- In certain circumstances the HEMS TCM may operate from the HHO TCM's position. **The HEMS TCM and HHO TCM can be the same person.**
- Commander's decision.
- Moving from cockpit to cabin and back becomes possible.

## Bild 6

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**BM1**

Bernelind Mats; 2023-11-21

# HEMS HEC OPERATIONS WITH **HOIST**

- **HEMS & HHO TCM can move from cockpit to cabin and back**
- **At an intermediate landing site**
- **New:** In flight. Also on the commander's decision.
- Risk assessment: the procedure is safe for the person and does not interfere with helicopter controls/switches.
- Procedures and training.
- **Examples**
- Walking (on largest helicopters if cabin/cockpit layout permits)
- Swivel seats or copilot seats that can be pushed back into the cabin
- Via the helicopter skid in hover flight.



# NEW : HEMS HEC OPERATIONS WITH SLING

- SPA.HEMS.105
- **USE OF THE CARGO SLING IN HEMS**
- The person in charge of guiding the helicopter is a sling TCM
- This person can be the HEMS TCM
- The intermediate landing site is also a HEMS operating site
- Airworthiness approved dual cargo hook
- or equivalent hook systems meeting recent design requirements
- Ground & flight operating procedures as per relevant paragraphs of SPO.SPEC.HEC.

# HEMS HEC OPERATIONS WITH SLING

- **TRAINING TOWARDS USE OF THE CARGO SLING IN HEMS**
- **Sling TCM training as per SPO.SPEC.HEC task specialist training**
- **Initial pilot training as per SPO.SPEC.HEC**
- Recurrent pilot and TCM training checking & recency as per SPA.HHO.
- Recency is likely to be much less than in SPO
- CAT risk profile
- **applicable from 25 May 2024**

**MOUNTAIN HEMS**

**OXYGEN**

# OXYGEN

- **At or above 10 000ft Oxygen**, or alleviations, are needed. HEMS is CAT, and under CAT all oxygen equipment needs to be certified
- **AMC1 CAT.IDE.H.240**
- AMC introducing portable oxygen bottles & certified nasal cannulas;
- **SPA.HEMS.110(c)**
- Complex helicopters to use the same oxygen requirements as the noncomplex, when operated in

## **AMC1CAT.IDE.H.240 och SPA.HEMS.110 (c)**

- Nasal cannulas can be certified (Draft special condition)
- Complex helicopters to use the same oxygen requirements as the noncomplex, when operated in HEMS with a MOPSC of 9 or less

## SPA.HEMS.110 (d)

- 30 min between 10 000 and 14 000 ft without O2
- 15 min between 10 000 and 16 000 ft without O2
- OR up to 30 min between 10 000 and 16 000 ft if backed by (ongoing) research programmes
- Includes time on ground above 10 000 ft Time is re-set when returning to base
- Multiple conditions (mitigations)

# OXYGEN ALLEVIATION

- **By day only**
- **Assessment of individual cases**
  - No medical condition that would lead to hypoxia
  - Acclimatisation (if relevant)
  - Personal and operator experience of high altitude flight.
- **Theoretical training [for TCM] based on module 050 of the CPL/ATPL theoretical knowledge**

# OXYGEN ALLEVIATION

- **Initial & Recurrent hypoxia training for all crew**
- Know own reaction to hypoxia onset : Hypobaric chamber or ROBD.
- Detect hypoxia onset of crew member: observing other crew member training.
- Hypoxia onset scenario to be relevant to the helicopter mission
- **SOPs**
- **applicable from 25 May 2024**



**HEMS PERFORMANCE: extended scope of HEMS**

**SPA.HEMS.125**

## HEMS PERFORMANCE: extended scope of HEMS

- **NON-MEDICAL EMERGENCY RESCUE OPERATIONS :**
- **CAN** currently be flown with single engine CAT B helicopters
- Will remain so above 3000 ft.
- CAT regulations remain applicable. For CAT B: CAT.POL.H.420 approval & endorsement process
- **DAY VFR,**
- Congested hostile areas are not allowed.
- Additionally, for cat B, crash worthy-fuel tanks and seats with upper-torso restraint are required.

## HEMS PERFORMANCE: current scope of HEMS

- **Unchanged below 7000 ft.** In a hostile environment:
  - PC2 at HEMS operating sites
  - PC1 at hospitals in congested hostile environment or public interest site derogation (CAT.POL.H.225).
- **At HEMS sites above 7000 ft :**
  - Many helicopter types in the current fleet no longer meets PC1/PC2 (Vz at 2' OEI power and Voss >150 ft/min at 1000 ft above site).
  - **PC3 with cat A helicopter is allowed included at night.**

## HEMS WITH **NON-CATEGORY A** HELICOPTER

- **Above 8000ft CAT B certified helicopters including single engines can be used.**
- **CAT regulations remain applicable. For CAT B/PC3 :**
- CAT.POL.H.420 approval & endorsement process
- DAY VFR,
- Congested hostile areas are not allowed.
- **HEMS TCM should be able to sit in a forward facing front seat**
- Additionally, crash worthy fuel tanks and seats with upper-torso restraint are required.
- **No CAT A helicopter should be available for the mission.**

## HEMS WITH **NON-CATEGORY A** HELICOPTER

- **Only above 8000 ft.**
- **Congested hostile areas are not allowed.**
- No flight to hospital in the city. Only light injuries OR only initial response until cat A helicopter/ambulance takes over (RdV system).

**HEMS TCM should be able to sit in a forward facing front seat**

Only for large and lightly equipped helicopters

**No CAT A helicopter should be available for the mission.**

Only for peak demand

**CAT.POL.H.420 approval and endorsement**

Only if the NAA of the State of operations allows.

# CREW COMPOSITION

## SPA.HEMS.130

Applicable from 25 May 2024

# CREW COMPOSITION: SP+TCM OR MP

- **SP + TCM operations and MP operations are now at same level**
- **Previous requirements for SP + TCM operations at night**
- 'specific geographic area' was deleted

# CREW COMPOSITION: SP+TCM OR MP

- **Previous ‘considerations for SP + TCM operations at night’ that become requirements for all HEMS operations**
- Continuity of a crew concept
- Aircraft tracking
- **Other ‘considerations’** are included in the HEMS risk assessment.



# CREW COMPOSITION: SP+TCM OR MP

- **SP + TCM operations and MP operations are now at same level**
- **SP+TCM operations:**
  - Requires extended TCM training;
  - reduced HEMS minima accessible only with additional TCM training
  - Require AP / SAS at night.
- **MP operations** enables to gather the required HEMS commander experience as HEMS co-pilot.

# CREW COMPOSITION : SP + TCM operations

- **TCM may leave the crew and become a medical passenger in the cabin or a medical helper on ground, but...**
- Only to depart from / return to the same HEMS operating site.
- HEMS VFR minima do not apply
- TCM takes part in departure briefing at operating site.

## CREW COMPOSITION : SP + TCM operations

- **TCM to sit in a forward facing front seat**
- Cabin layouts where TCMs sit in the cabin automatically when stretchers are deployed are no longer acceptable.
- Other TCM position available only for HEMS HEC, under a risk assessment, specifically for a given mission, and on the commander's decision

**Night operations**

**NIGHT HEMS**

**applicable from 25 May 2026**

## NVIS & NIGHT FLIGHTS SPA.HEMS.100(C)

- **NVIS to be mandated at night**
- Except within a well-lit urban area
- Except when flying to pre-surveyed operating sites

SPA.HEMS.100(c)

# NVIS AT NIGHT

- Current HEMS operators with **NO NVIS** are already expected **to fly only pre-surveyed sites**.
- But meeting AMC1 CAT.GEN.MPA.105 (re-survey of sites) is not straightforward.
- A transition to NVIS is expected to take place.
- Ca 2 ½ år **applicable from 25 May 2026**

# NIGHT EXPERIENCE FOR COMMANDERS

AMC1 SPA.HEMS.130(a)

**Applicable from 25 May 2024**

# NIGHT EXPERIENCE FOR COMMANDERS

- **Increased minimum experience at night**
- Currently, **20** hours of VMC/night as PIC / commander
- If no plan to land at a HEMS operating site at night: No change.
- **For unrestricted night HEMS**
- **50 hours of VMC/night including 20 as PIC/commander**
- 10 approaches/landings/ take-offs at operating site at night



# NIGHT EXPERIENCE FOR COMMANDERS

- **For the additional 30 hours :**
- 1 hour of night HEMS training in FSTD is credited 3 hours of night VMC experience
- Night experience as co-pilot also qualify

**SAS AND AUTO PILOTS**

**SPA.HEMS.110 (e)**

**Applicable from 25 May 2028**

# SAS AND AUTO PILOTS

- SAS or Auto pilot in Single PILOT at NIGHT
- Stabilisation system required for single pilot night operations
- SAS with retrospective application
- for new built (initial Cof A > Publication + 1 year), AP with ALT HOLD and HDG HOLD capability
- HEMS fleet with no AP/SAS is expected to be limited to approx. 15 helicopters aged 28 -34 years old when the amended rules apply

**AUTO-PILOTS and SAS for single-pilot at night**

**SPA.HEMS.130(d)**

# PILOT TRAINING

- **Instrument ratings**
- Not required in VFR
- **IMC recency becomes a training**
- Training to proficiency aiming at escaping IMC conditions
- Detailed manoeuvres to be practiced in IMC
- Minimum duration 45 min per 6 months OR longer if necessary to become proficient. With use of automation every 12 months.

# Applicable

- for HEMS operations covered by point (61)(a) of Annex I to Regulation (EU) No 965/2012 applicable **from 25 May 2024** — Implementing Regulation (EU) 2023/1020 for HEMS operations covered by point (61)(b) of Annex I to Regulation (EU) No 965/2012 applicable from **25 May 2026** — Implementing Regulation (EU) 2023/1020]

## **(61) HEMS-flygning:**

**a) en flygning med en helikopter som arbetar under ett HEMS-godkännande, där omedelbar och snabb transport är nödvändig och vars syfte är något av följande:**

**för att underlätta akut medicinsk hjälp genom att bära en eller flera av följande:**

**i) Medicinsk personal.**

**(ii) medicinska förnödenheter (utrustning, blod, organ, droger);**

**(iii) sjuka eller skadade personer och andra personer som är direkt involverade;**

## Definitions (61) HEMS-flight:

b) att utföra en operation där en person står inför en överhängande eller förväntad hälsorisk från miljön och något av följande villkor är uppfyllt:

(i) den personen behöver räddas eller förses med förnödenheter;

(ii) personer, djur eller utrustning måste transporteras till och från HEMS:s verksamhetsplats;



# SPA.HEMS.130(f)(1)&AMC1

- **NEW Training towards crew cooperation with TCM**
- Pilots with 500 hours in multi crew operations are grandfathered
- Pilots with MCC don't need more.

# TECHNICAL CREW MEMBER (TCM) TRAINING

SPA.HEMS.130(f)(1)&AMC2

(61)(a) 25 May 2024

(61)(b) 25 May 2026

## HEMS TECHNICAL CREW MEMBER : INITIAL

- **Initial Operator Conversion Course (OCC) to include**
- Ground training towards primary tasks
- Additional training modules for additional tasks, as required
- Initial training towards crew cooperation
- LIFUS & line check
- **Familiarisation flights no longer required.**
- **Operator Proficiency Check (OPC) is required after the OCC and before acting as required TCM.  
(ORO.TC)**

## HEMS TECHNICAL CREW MEMBER : INEXPERIENCED TCM

- **After the initial OCC, the TCM is inexperienced until 50 HEMS missions.**
- TCM recruited from another HEMS operator remain experienced.
- Inexperienced TCM to be crewed with commander with more than 50 hours on type since completion of pilot OCC (pilot line check on type).
- **Operators that recruit TCM from the street as they change types should exercise special care when crewing pilots and TCM.**

## HEMS TECHNICAL CREW MEMBER : RECURRENT

- **OCC when changing types / operators** (defined as lighter than the initial OCC)
- **Recurrent helicopter/FSTD training towards crew cooperation**
- Recurrent ground training (ORO.TC)
- Line check AND OPC which includes abnormal/emergency procedures.
- **Recurrent CRM assessment**
- **Use of FSTDs including for the line check.**
- **Recurrent training & checks every year as per ORO.TC.**

## HEMS TECHNICAL CREW MEMBER : RECURRENT

- **Person conducting the TCM training & checking**
- **Suitably qualified commander**
- For crew cooperation training with 350h flight experience in multi-crew.
- **For CRM assessments: trained in CRM concepts and the assessment of CRM skills.**
- **For cabin tasks where crew cooperation is not essential: suitably qualified TCM nominated by the operator**

**HEMS VFR MINIMA**

**SPA.HEMS.120**

Applicable from 25 May 2024

# HEMS VFR minima and enabling IFR

- **HEMS VFR MINIMA ( visibility, ceiling, distance to obstacles at night) are simplified**
- **HEMS VFR MINIMA apply only:**
  - in MP operations
  - In SP operations with trained TCM in the front seat.
  - TCM training & tasking includes radio-com, navigation and monitoring.
- **Elements of VFR minima not formally addressed in SPA.HEMS remain unchanged (in sight of surface when necessary, horizontal separation from obstacles, advisory speeds...)**



# AMC1 SPA.HEMS.120 (a)



AMC1 SPA.HEMS.120 (a)

Find  
spa.hems.120  
Previous

**Table 1**  
**HEMS operating minima**

DAY			
Ceiling (***)		Visibility	
500 ft and above		As defined by the applicable airspace VFR minima (*)	
499–300 ft		1 500 m (*)	
NIGHT			
NVIS		No NVIS	
Cloud base (***)	Visibility	Cloud base(***)	Visibility
1 200 ft (**)	3 000 m	1 200 ft (**)	5 000 m
		1 500 ft (**)	3 000 m

(\*) During the en-route phase, visibility may be reduced to 800 m for short periods when in sight of land if the helicopter is manoeuvred at a speed that will give adequate opportunity to observe other traffic or any obstacles in time to avoid a collision.

(\*\*) During the en-route phase, ceiling or cloud base may be reduced to 1 000 ft for short periods.

(\*\*\*) For the dispatch phase, ceiling can be used instead of cloud base if the clouds below the ceiling are not relevant to the planned flight path.

VFR weather information for NIGHT operations

AMC1 SPA.HEMS.145(b) HEMS operating  
base facilities

**Applicable from 25 May 2026**

## VFR weather information for NIGHT operations

- Weather information to be available from a weather station:
- LOCATED AT THE HEMS BASE
- or AT ANOTHER LOCATION THAT IS RELEVANT TO THE HEMS OPERATING BASE
- There will be a transition period.


# HEMS VFR minima and enabling IFR

**Applicable from 25 May 2024**

# HEMS VFR minima and enabling IFR

- HEMS VFR MINIMA on Pins approaches & departures :  
Reduced further in SPA.HEMS than in SPA.PinS-VFR
- HEMS VFR MINIMA apply only:
  - in MP operations
  - In SP operations with trained TCM in the front seat.

# HEMS VFR minima on PINS approaches

 HEMS VFR minima on PINS approaches

*AMC1 SPA. HEMS.120 (a)*

**Table 2**  
**Reduced HEMS operating minima**  
**when instructed to 'proceed VFR' following an instrument approach**  
 x is the distance between the missed approach point (MAPt) and the heliport or operating site

DAY		
	Visibility	Ceiling
$x \leq 1\,500\text{ m}$	x but at least 800 m	MDH
$x > 1\,500\text{ m}$	1500 m	MDH or 300 ft (*)
NIGHT		
	Visibility	Ceiling
$x < 2\,000\text{ m}$	$x + 500\text{ m}$ but at least 1 500 m	MDH
with NVIS: $2\,000 \leq x < 5\,000\text{ m}$	2500 m	MDH or 400 ft (*)
no NVIS: $2\,000 \leq x < 5\,000\text{ m}$	$x+500$ or 3000 m whichever is lower	MDH or 500 ft (*)

(\*) whichever is higher

# HEMS VFR minima on PINS departures



HEMS VFR minima on PINS departures

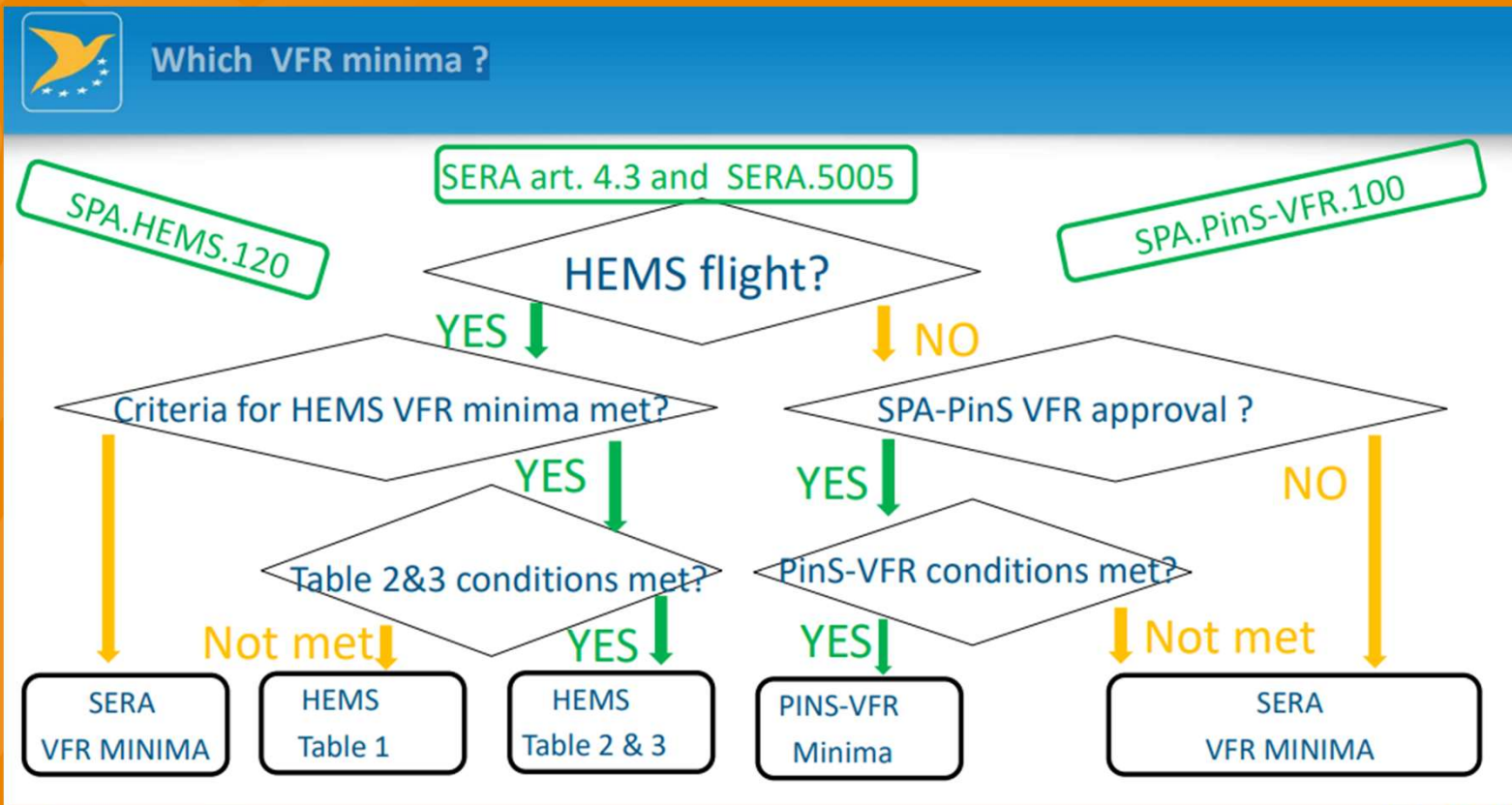
**Table 3**

**Reduced HEMS operating minima**  
when instructed to 'proceed VFR' prior to an IFR departure

x is the distance between the heliport or operating site and the initial departure fix (IDF)

DAY		
	Visibility	Crossing height at IDF
$x \leq 3000 \text{ m}$	800 m	Crossing height at IDF
$3000 \text{ m} < x \leq 5000 \text{ m}$	1500 m	Crossing height at IDF
NIGHT		
	Visibility	Ceiling
$x < 2500 \text{ m}$	x but at least 1500 m	Crossing height at IDF
with NVIS: $2500 \leq x < 5000 \text{ m}$	2500 m	Crossing height at IDF
no NVIS: $2500 \leq x < 5000 \text{ m}$	x or 3000 m whichever is lower	Crossing height at IDF

# Which VFR minima ?





# TERRAIN & OBSTACLE AWARENESS

OBSTACLE SAFETY EN ROUTE AND AT THE HEMS  
OPERATING SITE

SPA.HEMS.110(b)

**Applicable from 25 May 2024**

# TERRAIN & OBSTACLE AWARENESS

- **Moving map with own ship position and terrain+ obstacle database – for VFR only**
- HTAWS
- OR integrated moving map display
- OR EFB type B application
- **IMPORTANT NOTE: HTAWS RULEMAKING TASK MAY ADD REQUIREMENTS IN THE NEAR FUTURE**

SPA. HEMS. 110(b)

# HEMS OPERATING SITE

## SPA.HEMS.125(c)(4)

For HEMS operations covered by point (61)(a)  
of Annex I to Regulation (EU) No 965/2012

**Applicable from 25 May 2024**

# HEMS OPERATING SITE

- **SPA.HEMS.125(c) (4)**
- **The current PRE DEFINED MINIMUM SITE DIMENSIONS are retained. (2\*D x 2\*D by day; 2\*D x 4\*D by night).**
- **REDUCED DIMENSIONS (or other criteria for HHO/CARGO SLING) can be used based on**
  - Risk assessment
  - Operating procedures
  - Crew training.

# HEMS OPERATING SITE

- **The estimation of dimensions from the air and final decision to use a site or not / use Hoist / use sling or not belongs to the commander.**

SPA.HEMS.125(c)(4)

# HEMS OPERATING SITE ILLUMINATION

- SPA.HEMS.125(c)(4)
- **Illumination from the helicopter is required.**
- **It can be complemented by illumination from the ground.**
- **Applicable from 25 May 2024**

# ALLEVIATING THE MAIN HEMS RISKS

## OTHER

# OTHER HEMS REQUIREMENTS

- **SPA.HEMS.151**
- **AIRCRAFT TRACKING** required from take-off to landing, including the monitoring of any deviation
- **Applicable from 25 May 2024**
- HEMS operator's risk assessment is better defined in AMC
- Guidance on HEMS commander's tactical risk assessments
- **SPA.HEMS.140** Information, procedures and documentation
- **applicable from 25 May 2024**



**Slut**

**Omfattande ändringar, någon form av GAP  
analys behövs**

## Annex I Definitions for terms used in Annexes II to VIII

(61) 'HEMS flight' means a flight by a helicopter operating under a HEMS approval, where immediate and rapid transportation is essential and the purpose of which is either of the following:

to facilitate emergency medical assistance by carrying one or more of the following:

- (i) medical personnel;
- (ii) medical supplies (equipment, blood, organs, drugs);
- (iii) ill or injured persons and other persons directly involved;

(b) to perform an operation where a person faces an imminent or anticipated health risk posed by the environment and either of the following conditions is met:

- (i) that person needs to be rescued or provided with supplies;
- (ii) persons, animals or equipment need to be transported to and from the HEMS operating site;

# Annex I Definitions for terms used in Annexes II to VIII

(61a) 'HEMS HEC operation' means air and ground operations for the purpose of transporting one or more persons as human external cargo (HEC) within a HEMS flight;

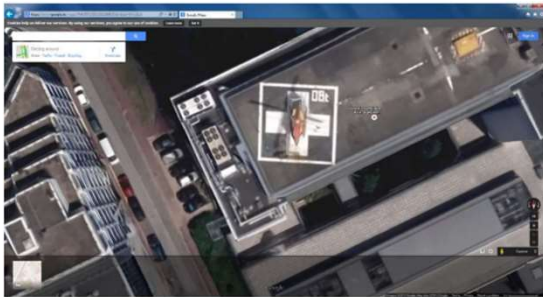
# Annex I Definitions for terms used in Annexes II to VIII

(62) 'HEMS operating base' means an aerodrome at which the crew members and the HEMS helicopter may be on standby for HEMS operations;

(63) 'HEMS operating site' means a site that is selected by the commander during a HEMS flight for a HEMS HEC operation or a landing or a take-off;

# Public interest sites

- ▶ **Approved public interest site > Alleviation to performance requirements at the site. (In practice: only hospitals).**
  - ▶ CAT A limitations do not permit landing OR CAT A procedures cannot be used. PC1 criteria cannot be met.



**Small dimensions**

or

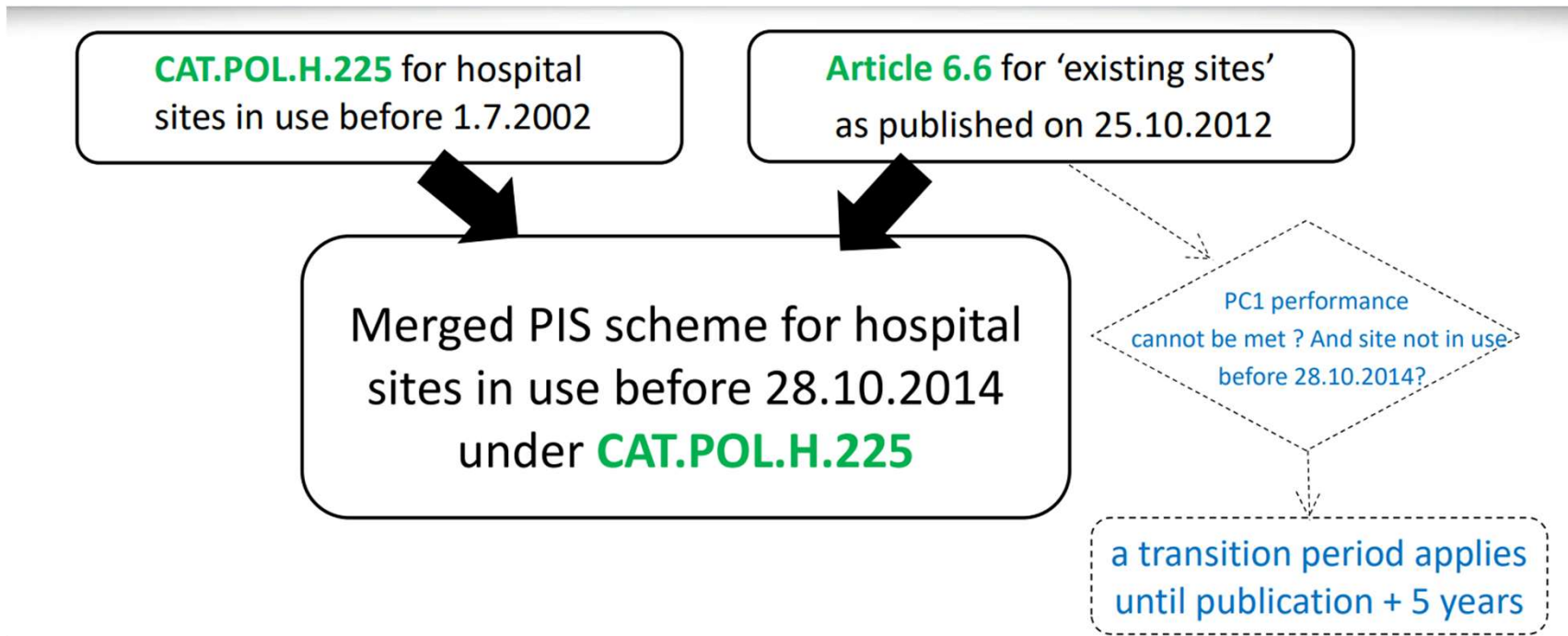


**big/close obstacles**

## Public interest sites

- **Mitigation :**
- mass restriction (8% climb OEI at Vtoss 2 " Power).
- Unchanged
- Acceptance of risk in the public interest at legacy hospitals.
- Unchanged

# Public interest sites : Merging 2 PIS schemes in one



# Public interest sites : OTHER CHANGES

- New CAT.POL.H.225: No new approved public interest sites.
- Historical sites remain eligible to performance alleviations
- New public interest sites (established after 28.10.2014) are NOT ELIGIBLE to performance alleviation.
- Currently approved public interest site can remain approved.
- Transition period: Art 6.6 can be used until it expires.



# Public interest sites : OTHER CHANGES

- **No permanent & significant worsening of the obstacle environment at approved public interest sites**
- Knowledge of the obstacle environment is required from the operator (OM-C) and the authority (PIS directory upgraded from GM to AMC)
- Operators to report changes to the obstacle environment to the authority
- Acceptance of obstacles or not is on the operator, but for approved PIS the authority has a second layer of control.
- *Note: Heliport (Annex 14 vol II) regulations and implementation, AIS services (VFR charts) and Building permissions near hospital sites are out of our scope.*

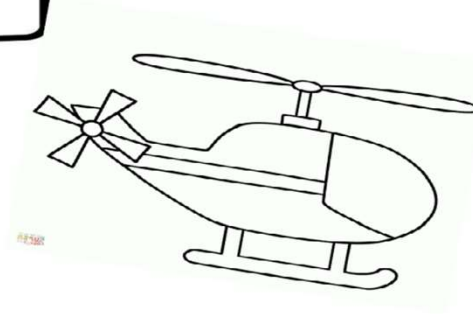
# Public interest sites : OTHER CHANGES

- **No new provisions regarding Site Dimensions**
- **In case of fleet renewal**, operators should select helicopters that can meet the performance requirements including site dimensions at existing sites
- **If this not possible (eg. the national health system requires larger helicopters that need greater site dimensions)**, Authorities MAY grant performance alleviations on sites established before 28.10.2014.

# Air Operations-En route

- **CAT.POL.H.215** OEI scenario : Distance to obstacles to be reduced based on Navigation performance : See presentation 1

Engine failure!



CLIMB ??