Common Performance Objectives (CPOs) for CAT.GEN.MPA.210 - Location of an aircraft in distress

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Underlying principles

- **Performance-based approach**
- **However rely on the existing for defining baseline**
  - e.g C/S spec
- **Address CAT.GEN.MPA.210…**
- **… + address requirements where a means compliant with CAT.GEN.MPA.210 can be used as an alternative**
  - In CAT.IDE.A.280 (alternative to an automatic ELT)
  - In CAT.IDE.A.285 (alternative to a low-frequency ULD)

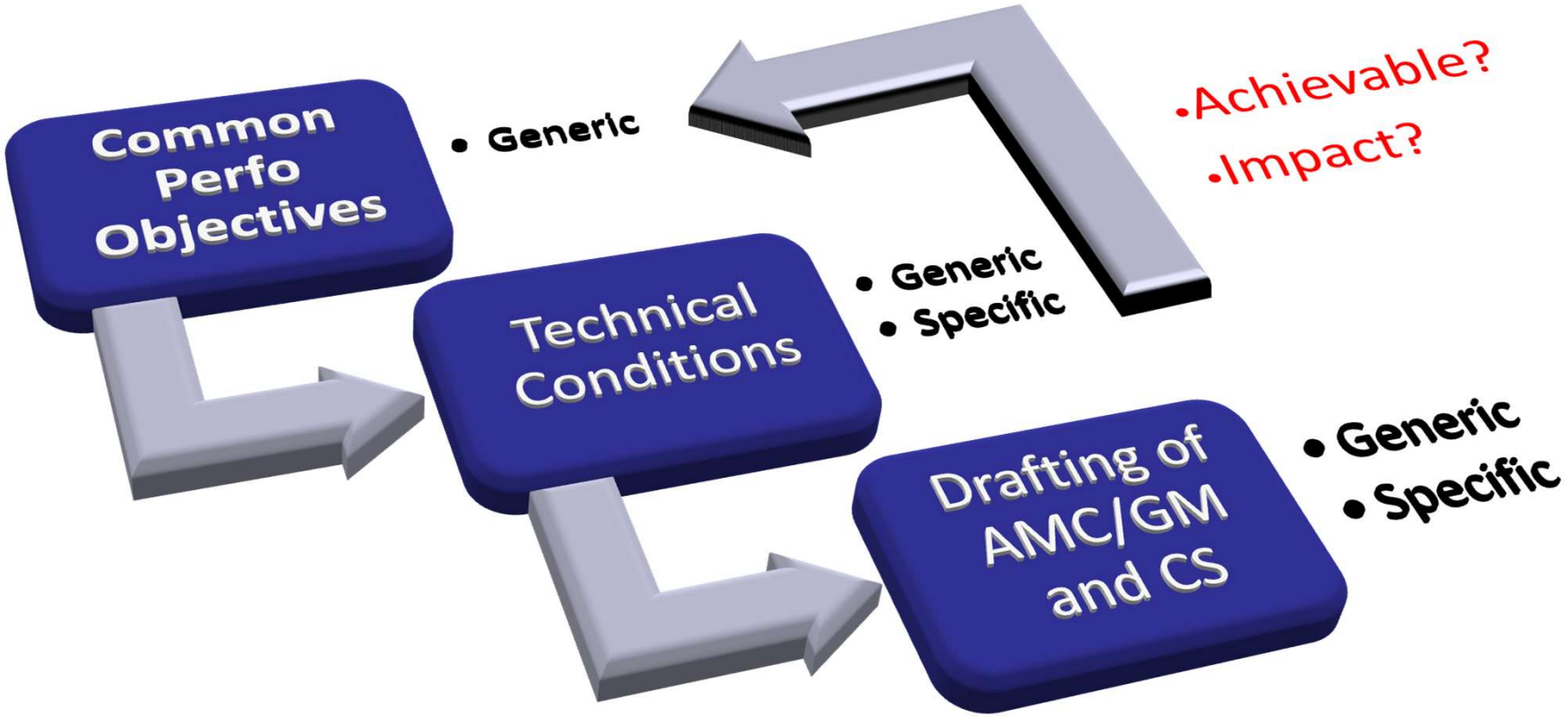
Underlying principles

- **address requirements where a means compliant with CAT.GEN.MPA.210 can be used as an alternative:**
  1. **« Just an ED-62B ELT(DT) » is not sufficient**
     - E.g. ELT(DT) should be crash survivable with 121.5 MHz homing signal or the ELT(AF) should remain installed
  2. **« Just high-rate tracking » is not sufficient**
     - E.g. automatic of transmission 121.5 MHz homing signal should be part of the solution or the ELT(AF) should remain installed

Underlying principles

- **Every common performance objective (CPO) is relevant, whatever the considered solution**
  - **However, CPOs may not appear as such in the requirements**
  - **CPOs are the objectives from which the requirements are derived**

How do we proceed?



Glossary of terms

- ***Point of end of flight***
- ***The system***
- ***The transmission service***
- ***The ground base***
- ***The signals, the data***
- ***Operating, activated, activation***
- ***Nuisance activation***
- ***Competent SAR service***
- ***Competent ATS unit***

→See at the end of this PPT

Areas covered by the common performance objectives

A. **Scope**
B. **Start and end of operation**
C. **Minimum content of data**
D. **Detection and transmission**
E. **Robustness**
F. **Localisation accuracy**
G. **Recording and retrieval of data**
H. **Manual control**
I. **Reliability**
J. **Interoperability**
K. **Safety of third parties**

A. Scope

- **CPO-2: Scope=accidents corresponding to b) of ICAO Annex 13 definition of an accident…**
  - *'b) the aircraft sustains damage or structural failure which:*

    — adversely affects the structural strength, performance or flight characteristics of the aircraft, and

    — would normally require major repair or replacement of the affected component,

    except for engine failure or damage, when the damage is limited to a single engine (…), to propellers, wing tips, antennas…'
- **… and taking place between take-off from and landing at an airfield.**
  - Fatalities & injuries without serious damage to the aircraft are out of scope
  - Aircraft 'severely damaged' is not limited to a hull loss. The accidents to be considered include survivable accidents and non-survivable accidents.
    - survivable accident = accident with conditions which an automatic fixed ELT is specified to withstand
  - Events taking place on an airfield do not require localization means.

B. Start and end of operation(1/2)

- **CPO-1: The operation of the system should automatically start not later than when the aeroplane becomes airborne.**
  - Automatic start
  - Until lift-off, the aeroplane is easy to locate

B. Start and end of operation(1/2 (2/2)

- **CPO-5: The system should remain operating throughout the flight and as long as propulsive power is available.**
- **In addition, the system should remain operating throughout the maximum possible duration of a flight without propulsive power on any engine, followed in the case where equipment is deployed, by a period of 15 minutes on ground without any propulsive power on any engine.**

  - in a distress situation, some power sources may be lost, and operation of the system should remain possible even if some engines have failed or been shut down.
  - In several accidents, all engines were lost at cruise flight level. Max possible gliding duration is close to 30 min for a large aeroplane.
  - after a “soft” landing or ditching (no detection of PEF), all aircraft power sources may be lost. In that case manual deployment(and if applicable automatic deployment based on hydrostatic detection) must remain possible for at least 15 minutes
    - 15 minutes recommended by EUROCAE ED-62B.

C. Minimum data content (1/2)

- **CPO-20: When activation signals are to be transmitted, the system should transmit signals necessary to obtain the following data :**
  1. **system activation,**
  2. **latitude, longitude and time at which these data are valid,**
  3. **aircraft identification, and**
  4. **the type of airborne equipment which transmitted the signals.**
  - **In addition, when practicable :**
    - **Estimated accuracy of latitude and longitude;**
    - **Indication of whether latitude and longitude were valid and refreshed;**
    - **whether activation was automatic or manually triggered; and**
    - **altitude, groundspeed and ground track.**
- CPO-3 defines when activation/deactivation signals should be transmitted
- minimum information to address the questions: Who? Where? When?
- Consistency with international standards regarding distress information sharing:
  - C/S T.001, Annex A, content of the user-location protocols
  - GADSS Concept of Operations, section 3.4

C. Minimum data content (2/2)

- **CPO-20 (continued): When deactivation signals are to be transmitted, the system should transmit before ceasing transmission, signals necessary to obtain the following data :**
  1. **aircraft identification,**
  2. **deactivation of the system, and**
  3. **the type of airborne equipment which transmitted the signals.**

- It is important for SAR purposes to know whether the transmission ceased because the system automatically deactivated or another cause (ending transmission is addressed in CPO-3).
- The signal transmission may have to be repeated for increasing the probability that it is successfully transmitted.
  - However this does not imply an acknowledgement of receipt from the ground.

D. Detection and transmission (1/6)

- **CPO-3: The system should be capable of automatically activating upon detection that an accident where the aeroplane is severely damaged has just occurred, is occurring or is likely to occur in near future.**
  - The system may activate before, during or just after the accident.
  - Automatic activation (manual activation by the flight crew: see CPO-11)

D. Detection and transmission (2/6)

- **CPO-3 (continued): As soon as the system is activated,**
  - **it should automatically start transmitting signals within a timeframe maximizing the likelihood that at least a set of data corresponding to an activation signal is received and**
  - **it should transmit signals at time intervals not exceeding 1 minute at least until reaching the point of end of flight or it is deactivated.**

  - The minimum set of data corresponding to an activation signal is specified in CPO-20
  - Goal = quick localisation of the point of end of flight. Transmission of signals starting as fast as possible, in order to increase probability of at least one successful transmission
    - For a post-crash transmission (e.g ADFR), 1 minute could be acceptable
    - For pre-crash transmission(e.g ELT(DT), HRT), target = a few seconds,
  - signal transmission at intervals of max 1 minute until PEF is reached
    - Consistent with CPO-9 (6 NM 2D accuracy for survivable and non-survivable accidents)
    - For data recipients (CPO-22) to recognize when aeroplane is entering/leaving area of competence

D. Detection and transmission (3/6)

- **CPO-3 (continued): upon deactivation, the system automatically transmits deactivation signals to the communication infrastructure within 1 minute of the deactivation time.**
- In order to spare SAR resource, a signal is also sent when the system is deactivated.
- Together with CPO-17 and CPO-18, this aims at limiting the impact of nuisance activations.
- See CPO-20 for the content of deactivation signals.

D. Detection and transmission (4/6)

- **CPO-3 (continued): If the system is capable of automatically activating prior to an accident where the aeroplane is severely damaged, deactivation results only from:**
  - **the automatic detection of a confirmed return to safe flight conditions; and**
  - **when in flight, the conditions for automatic activation are no more valid for 5±1 minutes.**

  - Stop the transmission of signals when it is not needed anymore, in order to avoid unnecessary actions from the side of SAR service..
    - Example: loss of control in flight, followed by a recovery. In that case, the transmission should be stopped some time after a stable flight regime is gained.
  - 5 minutes is considered sufficient to confirm that the imminent risk has disappeared – should the conditions deteriorate again, the system will activate again
  - 5 minutes at Mach 0.8 is about 40 NM. Given the size of the SAR regions, it is unlikely that the aircraft will cross more than two SAR regions before the system is deactivated.

D. Detection and transmission (5/6)

- **CPO-10: The transmission service used by the system should include a communication infrastructure to transmit signals and convert them into data, a distribution service to automatically dispatch this data to the competent SAR service or the competent ATS unit, and a recording service.**
  - Only SAR service and ATS unit have recognized competence in managing distress situations.
    - end-users (SAR service and safety investigation authorities) doubt that all operators would be capable of properly managing incoming activations and of notifying.
  - COSPAS-SARSAT signal path: ELT -> satellite -> LUT -> MCC -> competent SAR services (RCC or SPOC); the operator is out of the loop
  - ATS units are responsible for coordinating alerts (ICAO Annex 11 Chapter 5) and notifying SAR. ATS unit contact published in the AIP (ICAO Annex 15);
    - transmitting data to the competent ATS unit(s) is an alternative to transmission to MCC/RCC.
  - CPO-10 means
    - Detect and convert the signals in the data such as defined in CPO-20
    - Automatically identify the competent SAR service or the competent ATS unit, and
    - transmit data to the competent SAR service or the competent ATS unit(not just notify them)
    - Automatically record the data (refer to CPO-12)

D. Detection and transmission (6/6)

- **CPO-22: the performance of the transmission service used by the system should be such that not more than 17 minutes elapse between emission of signals by the system and delivery of the corresponding data to the competent SAR service or the competent ATS unit.**

  - Even if the accident is not survivable, quick data transmission is useful for retrieving evidence, for investigation purposes. Therefore CPO-22 does not make distinction between survivable and non survivable accidents.
  - C/S time specification for detecting signals, processing them and delivering data to an MCC (="communication infrastructure" performance):
    - C/S specifications T.019 : the 406 MHz signal should be detected and reach a MEOLUT within 10 minutes with 99% probability
    - C/S specification A.005 (MCC perf specifications), 5.2.1.3: 'An MCC shall receive all distress tracking alert data by a LUT within 2 minutes from the completion of LUT processing 99% of the time.'
  - C/S current perfo specification for an MCC to dispatch the data to the competent RCC ("distribution service" performance):
    - Within 5 minutes of reception from a LUT according to C/S A.005

E. Robustness (1/8)

- **CPO-4: The system performance should not be affected by the conditions encountered during most accidents in the scope of CAT.GEN.MPA.210.**
  - Intent = locate the accident also when it is not survivable, while automatic ELTs were made only for survivable accidents.
  - able to cope with circumstances associated with an accident scenario
    - Crash testing conditions for the part of the airborne equipment used by the system and expected to be operating after a crash;
    - Demanding environmental testing conditions for the part of the airborne equipment expected to be operating until the crash (e.g high level of vibrations due to engine failure, depressurization, etc).
  - However there might be specific accident scenarios where demonstrating successful performance of the system would be too challenging.

E. Robustness (2/8)

- **CPO-6: The system should perform its intended function:**
  - **in the whole flight envelope of the aeroplane, and**
  - **When the aircraft is experiencing high attitude values, high attitude rate values, overspeed or high vertical speed typically encountered during a loss of control in flight**
- historical accidents with loss of control in flight : abnormal pitch and roll attitude, abnormal pitch rate, roll rate or yaw, etc.
- "The system perform its intended function" means:
  - Deployment followed by successful ELT signal transmission for an ADFR;
  - Successful transmission of signals for an ELT(DT) or for HRT;
  - Signal contains the information specified in CPO-20; and
  - Signal successfully detected by the communication infrastructure.
- FDR data from historical accidents with large aeroplanes suggest following operational domain:
  - Pitch, Roll: +/- 60°, Pitch rate and Yaw rate: +/- 20°/sec, Roll rate: +/- 30°/sec
  - Altitude: 0 ft to absolute ceiling of the aircraft, Longitude, latitude: E/W 180° and N/S 90°
  - Speed: 0 kt to Vd/Md (design diving speed)
  - Vert rate: from maximum negative vert rate at Vd to maximum positive vert rate
- The operational domain should contain all the trigger thresholds!

E. Robustness (3/8)

- **CPO-6 (continued): The system should perform its intended function:**
  - **wherever the accident occurs on Earth.**
- Aeroplanes of over 27 000 kg have a significant range
- Accidents with aeroplanes over 27 000 kg MCTOM might occur almost everywhere, including outside the normal area of operation

E. Robustness (4/8)

- **CPO-7: The system should perform its intended function in case of accidents over water as well as accidents over land.**
  - The system should work in accidents such as AF447 and MH370, where the accident occurred in oceanic areas and far away from any shore.

E. Robustness (5/8)

- **CPO-16: The communication infrastructure used by the system should meet demonstrated performance regarding:**
  - availability,
  - integrity,
  - capacity, and
  - coverage.

  - the communication infrastructure (see glossary of terms) should meet performance sufficient to ensure successful transmission.
  - For COSPAS-SARSAT MEOSAR System: objectives are specified in C/S R.012, Annex E

E. Robustness (6/8)

Availability	99.5%	The system should be available 99.5% of the time over a period of one year. The system is considered to be unavailable when any of the performance requirements listed in this Table cannot be satisfied.	This goal may be achieved through various means, i.e. by providing adequate redundancies and/or high reliability of sub-systems.	C/S A.005 requires a 99.5% availability of Cospas-Sarsat MCCs. The overall System availability is achieved through redundancy of the other sub-systems.
Coverage	Global	The system should satisfy the minimum performance requirements listed in this Table regardless of the beacon position		The existing Cospas-Sarsat LEOSAR system provides global coverage for 406 MHz beacons
Capacity				

RCP availability criteria			
Specification: RCP 240/D	*Application: CPDLC*		*Component: CSP*
Availability parameter	*Efficiency*	*Safety*	*Means of compliance*
Availability — CSP (A_{CSP})	0.9999	0.999	Contract/service agreement terms.
Unplanned outage duration limit (minutes).	10	10	Contract/service agreement terms.
Maximum number of unplanned outages.	4	48	Contract/service agreement terms.
Maximum accumulated unplanned outages time (minutes/year).	52	520	Contract/service agreement terms.
Unplanned outage notification delay (minutes).	5	5	Contract/service agreement terms.

E. Robustness (7/8)

- **CPO-23: when the system relies on non-dedicated airborne resources, applications needed by the system should have a high priority.**
  - The system may rely on non-dedicated airborne equipment
  - However, in that cases, the airborne equipment should be configured so that the processes needed by the system will not give priority to less time-critical processes
  - Only processes which are essential for the continued safe flight and landing should have a higher priority.

E. Robustness (8/8)

- **CPO-21: the system should emit activation signals and deactivation signals on frequencies which are protected by ITU Radio Regulations, and which belong to the protected aeronautical safety spectrum or to the protected distress spectrum.**

  - Using frequencies of the protected aeronautical safety spectrum or of the protected distress spectrum is essential for successful transmission of signals from the aircraft to the communication infrastructure.
    - E.g 1090 MHz is a protected frequency of the aeronautical safety spectrum
    - E.g 406 MHz is a protected frequency of the distress spectrum
  - GADSS ConOps recommends that for ADT and post-flight localisation, only frequencies of the protected aeronautical safety spectrum or of the protected distress spectrum are used.
  - However, data transmission inside the communication infrastructure does not need to use protected frequencies.

F. Localisation accuracy (1/2)

- **CPO-9: Data received within 15 minutes after the aircraft reached the point of end of flight should be sufficient to locate this point within 6 NM 2D location accuracy (with 95% probability).**

  - Objective: get sufficient info to roughly locate the accident, whether the accident is survivable or not.
  - 6 NM accuracy deemed sufficient to locate the wreckage and the flight recorders
    - before underwater locating devices (ULDs) of the recorders stop transmitting.
  - 6 NM = resulting accuracy of PEF taking into account all sources of errors
  - 15 minutes: compatible with timeframe of SAR services for deploying assets.
  - Within 15 minutes after reaching the PEF is not within 15 minutes after activation: the system might be activated long before reaching the PEF (e.g losing all engine power at cruise level)
  - information expected to arrive on the ground before mobile SAR asset are deployed, because key to determine which assets to deploy.

F. Localisation accuracy (2/2)

- **CPO-8: In case of a survivable accident:**
  - **data received within 15 minutes after the aircraft reached the point of end of flight should be sufficient to locate this point within 200 meters 2D-accuracy (95% probability); and**
  - **a 121.5 MHz homing signal compatible with standard homing direction finders, is automatically transmitted for at least 48 hours after reaching the point of end of flight.**
  - Objective: provide very accurate localisation of the aircraft after a survivable accident
    - Survivable= conditions that an ELT(AF) is designed to survive.
  - 121.5 MHz homing signal is a must for SAR operations: easy to use in operation, redundant with 406 MHz signal and all SAR assets are equipped with homing direction finder.
  - However, after a landing over water or a ditching, the aircraft may sink before SAR are in the reach of homing signal. Signals sufficient to locate the PEF within 200 meters should be transmitted:
    - 200 meters consistent with SAR needs (ref IAMSAR Vol III regarding visibility and sweep width with aerial means).
    - 200 meters achievable with SGB (independent localisation 2D accuracy: 100 meters and 30 minutes with 95% probability according todocument C/S G.008 paragraph 3.3.1) and FGB with integrated GNSS receiver (encoded localisation data, resolution of localisation data is 120 meters)
    - Quick transmission of signals is already covered by CPO-10.

G. Recording and retrieval of data

- **CPO-12: The recording service should include:**
  - **integral recording on the ground of the data and retention of these data for at least 30 days, and**
  - **capability to retrieve recorded data within 30 minutes when it was recorded in the last 48 hours.**

  - The recording service is mentioned in CPO-10
  - The data to record are specified in CPO-20. This data is key for SAR and investigation purposes
    - -> should be recorded without loss, retained for sufficient duration and be quickly retrievable when needed.
  - C/S A.005, section 5.8: ‘MCCs shall archive alert data and messages for at least 30 days' and 'MCCs shall respond to requests for alert data and messages covering the preceding 48-hour period within 30 minutes.’

H. Manual control (1/3)

- **CPO-11: Whether the system is operating or not, the flight crew should have means to:**
  - **manually activate the system (but not deploy any equipment);**
  - **manually deactivate the system when it was manually activated;**
  - **manually trigger a 121.5 MHz homing signal at least when the aircraft is not airborne; and**
  - **manually stop transmission of the 121.5 MHz homing signal.**
  - ('operating' : see glossary of terms)
  - the system may replace an ELT(AF) according to CAT.IDE.A.280 -> it should offer the possibility to be manually activated even if it is not operating:
    - Mitigate the risk of failed transition to operating mode
  - Examples of manual activation: emergency landing, fire on board, etc.
  - 'manual activation' does not mean 'manual deployment'! There should be no means for the flight crew to command manual deployment (see CPO-14).
  - manually triggering 121.5 MHz homing signal may be blocked in flight (to avoid conflict with use of the emergency radio on 121.5 MHz)

H. Manual control (2/3)

- **CPO-15: Except by using a circuit protective device, no way to disable the system should be provided during the flight.**
  - The purpose is not to make the system "tamper-resistant", but to ensure that the system is operative when it is needed.
    - Nuisance activations should not be addressed by disabling the system!
  - If a failure mode of the system has a negative safety effect (e.g. causing failures of other systems) then it can be addressed by operating a circuit protective device.

H. Manual control (3/3)

- **CPO-24: activation or deactivation of the system by a command sent from outside the aircraft should not be possible.**
  - Remote control of the system is excluded because:
    - no concept of operation approved by the aeronautical and the SAR community at a global level,
    - potential security concerns, and
    - No demonstrated benefit for increasing the survivability of accidents with large aeroplanes

I. Reliability (1/3)

- **CPO-13: The reliability of the airborne equipment used by the system and the serviceability tasks should be such that the continued serviceability of this airborne equipment can be ensured by the aeroplane operator.**

  - the system will be seldom activated but it must work when it is activated.
  - Like every required aircraft function, it will be addressed by MEL.
  - In order to ensure a low probability of latent failure:
    - a minimum level of reliability is expected,
    - serviceability tasks should be compatible with the time constraints of commercial operation and affordable

I. Reliability (2/3)

- **CPO-17: The design reliability of the airborne equipment used by the system should be such that erroneous activation is at least classified as a major failure condition.**

  - SAR service have limited operational capacity
  - SAR operations can be risky
  - a high rate of nuisance activations may decrease confidence in the system.
  - 2 nuisance activations per 100 000 flight hours is the maximum acceptable rate given all nuisance activations received from current ELTs (refer to ED-237)
    - Mostly on the ground (e.g. during maintenance)
  - The scope of this objective is automatic activations only (does not encompass manual activations)

I. Reliability (3/3)

- **CPO-18: The operator should have means and procedures to limit the negative impact of nuisance activations on the SAR service.**
  - SAR service have limited operational capacity and their activity is risky.
    - when the operator identifies that an activation of the system on one of its aircraft is a nuisance activation, it should be able to inform rapidly the competent ATS unit.
    - The competent ATS unit will inform the competent SAR service (per ICAO Annex 11 Chapter 5).
  - At aircraft level:
    - the system records the nuisance activation conditions
  - At operator level (Operational control over the flights):
    - procedures for confirming/discarding an activation (E.g checking aircraft tracking data, contacting the flight crew, the ATS unit, etc.)
    - means and procedures for identifying and informing competent ATS unit when a nuisance activation was found.
  - At operator level (after the flight):
    - Maintenance instructions
    - Analyse nuisance activations in order to determine their probable cause

J. Interoperability

- **CPO-19: The distribution service should provide the data in plain text.**
- **In addition, this text should be presented in a format which is internationally recognized by SAR services or by ANSPs.**

- The data to be provided is specified in CPO-20. See also CPO-22 for the timeframe to deliver the data
- A large aeroplane accident might occur anywhere i.e. involve any SAR service.
- the data should be received in plain text,
  - No special tool and no need for contracting a special service to read the received messages.
- Handling multiple formats is a waste of time for the SAR service, and time is critical for SAR operations: the format of the text should be internationally recognized
  - IAMSAR Manual Vol II, 2.28.31: 'When a commercial locating, tracking and emergency notification service provider (non-Cospas–Sarsat) must pass distress alert information to an RCC, there is need for consistency of formats and styles, for all essential information to be provided, and for the information to be easily and clearly understandable.'
  - Example: SIT 185 format specified in C/S specification G.007 chapter 5 (MCC messages). Other examples of message formats in IAMSAR Vol II, Appendix B.

K. Safety of third parties

- **CPO-14: The additional safety risks for third parties caused by unintended deployment (when the system includes deployable equipment) should be addressed**

- Any risk for the aircraft occupant, ground staff, other aircraft and people on the ground need to be carefully addressed.
- Relevant in particular for systems including deployable equipment (ADFR, ELT(AD)):
  - No possibility to manually deploy;
  - Assess the risk that unintended deployment affects the safe conduct of the flight;
  - unintended deployment is classified at least as a Major failure condition (1E-5/FH) to address the risk to injure people on the ground.

Glossary of terms

- ***Point of end of flight***
- ***The system***
- ***The transmission service***
- ***The ground***
- ***The signals, the data***
- ***Operating, activated, activation***
- ***Nuisance activation***
- ***Competent SAR service***
- ***Competent ATS unit***

Glossary of terms

- **Point of end of flight**
  - point where the aircraft
    - crashed into land or water, or
    - landed on land or water, or
    - Was destroyed in case of in-flight destruction
- **The system**
- **The transmission service**
- **The ground base**
- **The signals versus the data**
- **Operating, activated, activation**
- **Nuisance activation**
- **Competent SAR service**
- **Competent ATS unit**

Glossary of terms

- **Point of end of flight**
- **The system**
  - Set of airborne applications and airborne equipment which is organised to meet CAT.GEN.MPA.210
- **The transmission service**
- **The ground base**
- **The signals versus the data**
- **Operating, activated, activation**
- **Nuisance activation**
- **Competent SAR service**
- **Competent ATS unit**

Glossary of terms

- **Point of end of flight**
- **The system**
- **The transmission service**
  - Transmission service = the service which relies on the communication infrastructure, the distribution service and the recording service to make the information sent by the system available to the competent ATS unit and/or the competent SAR service
- **The ground base**
- **The signals versus the data**
- **Operating, activated, activation**
- **Nuisance activation**
- **Competent SAR service**
- **Competent ATS unit**

Glossary of terms

- **Point of end of flight**
- **The system**
- **The transmission service**
  - Communication infrastructure = Network of sensors, repeaters and stations used to detect signals sent by the system when the latter is activated, to process the information contained by these signals into data, and to transmit this data to a ground base;
  - This infrastructure typically includes satellites and ground stations.
- **The ground base**
- **The signals versus the data**
- **Operating, activated, activation**
- **Nuisance activation**
- **Competent SAR service**
- **Competent ATS unit**

Glossary of terms

- **Point of end of flight**
- **The system**
- **The transmission service**
  - ‘Distribution service’ is a service which automatically transmits data received by a ground base to the competent ATS unit and/or the competent SAR service (similar to a MCC dispatching ELT alerts to RCCs)..
- **The ground base**
- **The signals versus the data**
- **Operating, activated, activation**
- **Nuisance activation**
- **Competent SAR service**
- **Competent ATS unit**

Glossary of terms

- **Point of end of flight**
- **The system**
- **The transmission service**
- **The ground base**
  - First station on the ground where the data necessary to meet CAT.GEN.MPA.210 is received.
  - (Example in the case of COSPAS-SARSAT: « ground base » is the MCC, not a LUT)
- **The signals versus the data**
- **Operating, activated, activation**
- **Nuisance activation**
- **Competent SAR service**
- **Competent ATS unit**

Glossary of terms

- **Point of end of flight**
- **The system**
- **The transmission service**
- **The ground base**
- **The signals versus the data**
  - The signals = what is transmitted by the system (airborne side) when activated;
  - A signal may contain position data;
  - A signal may also not contain any such data (e.g. homing signal) or signal post-processing may be needed to compute some data (e.g independent localisation of a signal source).
- **Operating, activated, activation**
- **Nuisance activation**
- **Competent SAR service**
- **Competent ATS unit**

Glossary of terms

- **Point of end of flight**
- **The system**
- **The transmission service**
- **The ground base**
- **The signals versus the data**
- **Operating, activated, activation**
  - The system is operating = all its functions are operating or ready to operate immediately (in particular the detection of accident condition and the signal transmission)
- **Nuisance activation**
- **Competent SAR service**
- **Competent ATS unit**

Glossary of terms

- **Point of end of flight**
- **The system**
- **The transmission service**
- **The ground base**
- **The signals versus the data**
- **Operating, activated, activation**
  - The system is activated= it is transmitting activation signals to a communication infrastructure.
- **Nuisance activation**
- **Competent SAR service**
- **Competent ATS unit**

Glossary of terms

- **Point of end of flight**
- **The system**
- **The transmission service**
- **The ground base**
- **The signals versus the data**
- **Operating, activated, activation**
- **Nuisance activation**
  - Activation of the system which is not desirable because not corresponding to an accident condition in the scope of CAT.GEN.MPA.210.
- **Competent SAR service**
- **Competent ATS unit**

Glossary of terms

- **Point of end of flight**
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- **The transmission service**
- **The ground base**
- **The signals versus the data**
- **Operating, activated, activation**
- **Nuisance activation**
- **Competent SAR service**
  - Rescue coordination center (RCC) of SAR point of contact (SPOC) competent for the area where the aeroplane is likely to be
- **Competent ATS unit**

Glossary of terms

- **Point of end of flight**
- **The system**
- **The transmission service**
- **The ground base**
- **The signals versus the data**
- **Operating, activated, activation**
- **Nuisance activation**
- **Competent SAR service**
- **Competent ATS unit**
  - Air traffic service unit competent for providing the alerting service (refer to ICAO Annex 11 Chapter 5) in the airspace where the aeroplane is likely to be.

EASA
European Aviation Safety Agency

End slide

Your safety is our mission.

An agency of the European Union