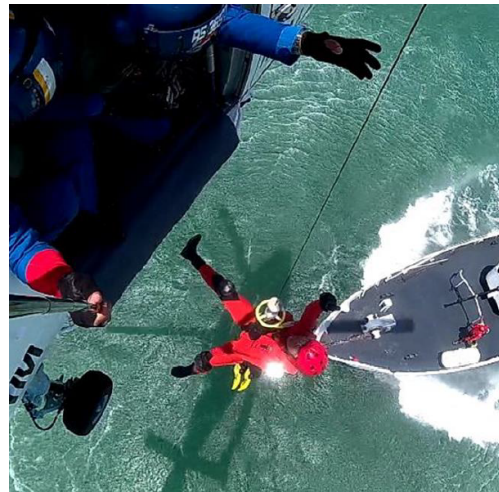






PETRONAS



OFFSHORE JOINT AERONAUTICAL SAR OPERATION GUIDELINE

Civil Aviation Authority of Malaysia (CAAM)
PETRONAS

Version 1.0 September 2021

Endorsed by CAAM	Endorsed by PETRONAS
	
Name: Nasuruddin bin Zainol Abidin Designation: Director, Air Traffic Management Division, Civil Aviation Authority of Malaysia	Name: Shamsol Efendy bin Dismal Designation: Head, Health, Safety & Environment, Malaysia Petroleum Management, PETRONAS
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BACKGROUND

With a large number of offshore personnel being transported to and from Oil and Gas (O&G) platforms yearly, the necessity to plan strategies for contingencies for these operations has become imperative. The National Search and Rescue (SAR) Committee acknowledges the importance of these O&G platforms and the O&G's contribution towards the nation's development and economy.

Offshore helicopter search and rescue operations within controlled and uncontrolled airspace are not clearly defined in the current guidelines for National SAR agencies, Airport Operators, O&G Operators and O&G Air Operators in order to have a systematic and efficient SAR operation in Malaysia.

Civil Aviation Authority of Malaysia (CAAM), as the National Aeronautical SAR Authority in Malaysia in collaboration with Petroliaam Nasional Berhad (PETRONAS) through Malaysia Petroleum Management (MPM) established the Terms of Reference (TOR) and Standard Operating Procedures (SOP) for Offshore Joint Aeronautical SAR Operation in Malaysia. This is to ensure that any SAR operations can be promptly initiated and executed; effectively utilizing SAR resources made available by the various government agencies and private entities.

A Task Group which consisted of members from CAAM, MPM, representative from O&G Air Operator and O&G Operator, had conducted a series of meetings to discuss and prepare the TOR & SOP as per timeline below:

- a) 18th – 19th December 2017, Workshop defining the concept of operation and cooperation, roles and responsibilities by the government and private entities in managing Joint SAR Operation, hosted by PETRONAS;
- b) 19th – 20th February 2018, Workshop drafting SOP/TOR for Joint Offshore Joint SAR Operation hosted by Shell Malaysia Exploration & Production;
- c) 27th April 2018, Presentation of the Offshore-Joint SAR Operations SOP/TOR hosted by CAAM.

Furthermore, a series of Tabletop and Field Test Exercises have been successfully executed as follows;

- a) 12 – 14 December 2018: Search & Rescue Exercise CAMAR 01/2018 Tabletop Exercise (TTX); and
- b) 8 – 10 October 2019: Search & Rescue Exercise CAMAR 02/2019 Field Test Exercise (FTX).

The Task Group agreed to establish the Offshore-Joint SAR Operations Working Group (Offshore-JSAR WG) that shall be the principal instrument for consultation and co-ordination

for all matters concerning Joint SAR Operation within offshore area of operations. The Offshore-JSAR WG's TOR is mentioned in Part One of this document.

The procedures and guidance contained in this document have been prepared and deliberated by the Offshore-JSAR WG members.

OBJECTIVE

The SOP contained in this document details the concept of Joint Aeronautical SAR Operations in responding to incidents involving helicopters throughout the offshore area of operations within the Kuala Lumpur and Kota Kinabalu Search and Rescue Regions (SRR).

This document also serves as the link between Government SAR Response machinery (SAR Authorities, National SAR Agencies) and the O&G Operators' emergency management practices (O&G Air Operator, O&G Operator and vessels' owners).

In order to keep this document brief and concise, the explanation on roles and responsibilities of parties is limited to how they fit into the overall response in managing Offshore-Joint SAR operations.

REFERENCE DOCUMENTS

1. International Civil Aviation Organization (ICAO) ANNEX 12
2. The International Aeronautical and Maritime Search and Rescue (IAMSAR) VOL. I, II, III
3. National Security Council (NSC) Directive NO. 20
4. Civil Aviation Directive (CAD) – 12
5. National Aeronautical and Maritime Search and Rescue Manual (NAMSAR)
6. PETRONAS Procedure and Guidelines for Upstream Activities (PPGUA)
7. Incident Command System (ICS) GUIDELINES

RECORDS OF AMENDMENTS

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ABBREVIATIONS AND ACRONYMS

ARCC	Aeronautical Rescue Coordination Centre
ARK	Airborne Rescue Kit
ARSC	Aeronautical Rescue Sub Centre
ATC	Air Traffic Control
ATCC	Air Traffic Control Centre
ATS	Air Traffic Services
ATSU	Air Traffic Services Unit
BODEVAC	Body evacuation
CAAM	Civil Aviation Authority of Malaysia
CEO	Chief Executive Officer
COMCEN	PETRONAS Communication & Control Centre
EC	Emergency Coordinator
ECC	Emergency Control Centre
ECM	Emergency Crisis Management
ERP	Emergency Response Plan
Helibase	Oil & Gas Air Operator's base
HELIRAF	Dinghy attach to the aircraft
HLO	Helicopter Landing Officer
IC	Incident Commander
ICAO	International Civil Aviation Organisation
IMO	International Maritime Organisation
JASAR	Joint Aeronautical Search and Rescue
JSAR	Joint Search and Rescue
NAMSAR	National Aeronautical and Maritime Search and Rescue Manual
O&G	Oil and Gas
PAC	Petroleum Arrangement Contractor
PPGUA	PETRONAS Procedure and Guidelines for Upstream Activities
RO	Radio Operator
SAR	Search and Rescue
SAREX	Search and Rescue Exercise
SERT	Site Emergency Response Team
SITREP	Situation Report
SMC	SAR Mission Coordinator
SOP	Standard Operating Procedure
SRR	Search and Rescue Region
SRU	Search and Rescue Unit
TOR	Term of Reference
VFR	Visual Flight Rules
WG	Working Group

PART ONE : OFFSHORE JOINT SAR OPERATIONS WORKING GROUP (Offshore-JSAR WG) TERMS OF REFERENCE

1.0 OVERALL PURPOSE

- 1.1 The Offshore-Joint SAR Operations Working Group (Offshore-JSAR WG) Committee shall be the principal instrument for consultation and coordination in respect to all matters concerning Joint SAR Operation (“JSAR”) for offshore areas of operation within the Kuala Lumpur and Kota Kinabalu SRRs in accordance with International Civil Aviation Organization (ICAO) and International Maritime Organization (IMO) requirements.
- 1.2 The establishment of the Offshore-JSAR WG is to ensure that SAR operations within the offshore areas of operation can be promptly initiated and executed effectively utilizing SAR resources made available by the various government agencies and private entities.

2.0 OBJECTIVES

- 2.1 The objectives of the Offshore-JSAR WG are:
- a) to promote the concept of JSAR (Government & Private) for offshore operations;
 - b) to review, analyse and improve the Offshore-JASAR and Offshore-JMSAR SOP;
 - c) to serve as the focal point for the implementation, monitoring and improvement of the Offshore-JASAR and Offshore-JMSAR SOP; and
 - d) to conduct SAREXs to evaluate the effectiveness of the SOPs.

3.0 COMPOSITION

- 3.1 The Offshore-JSAR WG committee shall comprise representatives from the following organisations:
- a) National Security Council (NSC);
 - b) Civil Aviation Authority of Malaysia (CAAM);
 - c) Malaysian Maritime Enforcement Agency (MMEA)
 - d) PETRONAS;
 - e) National SAR Agencies; (refer Table A)
 - f) O&G Operators (refer Table B); and
 - g) O&G Air Operators (refer Table C).
- 3.2 The Chairman of the Offshore-JSAR WG shall only enjoy the seat for a period of one year in which the First Chairman shall be MMEA. The seat shall be vacant after a period of one year has lapsed and the seat of Chairman will be elected between MMEA, CAAM and PETRONAS on rotation basis.

3.3 Secretariat functions shall be identified and appointed by the Chairman.

4.0 METHODOLOGY

4.1 Scheduled meetings will be on yearly basis. However unscheduled meetings can be convened as and when required by the Chairman. An agenda shall be prepared by the Secretary according to the instructions of the Chairman for each meeting of the Offshore-JSAR WG committee.

4.2 The meeting of the Offshore-JSAR WG committee shall require a quorum of at least one representative from each organisation. Any decision taken at such a meeting must have the affirmative vote of all the representatives present.

4.3 Any new item for discussion shall be submitted to the Secretary at least twenty-one (21) days prior to the meeting. A representative may, however, circulate discussion papers on urgent matters directly to other representative if the deadline for submission of such papers cannot be met. Any matter raised without notice or short notice shall be considered in accordance with the spirit of its terms of reference, and deferment of discussion to a later meeting shall be agreed if determination of the problem cannot be achieved immediately.

4.4 The Secretary shall take and keep minutes after each meeting. Minutes of the meeting shall be circulated no later than three (3) weeks of the meeting being held to the Chairman and all representatives for review. Minutes would consist of decisions agreed by the committee or otherwise. Such minutes shall be duly signed by the Chairman.

TABLE A: REPRESENTATIVES OF NATIONAL SAR AGENCIES

- 1) Malaysia Maritime Enforcement Agency (MMEA)
- 2) Royal Malaysian Navy (RMN)
- 3) Royal Malaysian Air Force (RMAF)
- 4) Royal Malaysian Police (RMP)
- 5) Fire and Rescue Department of Malaysia (FRDM)
- 6) Other relevant agencies as listed in NAMSAR

TABLE B: O&G OPERATORS

- 1) Sarawak Shell Berhad / Sabah Shell Petroleum Company Ltd. (Shell)
- 2) Petrofac (M) Ltd. (Petrofac)
- 3) Carigali Hess Operating Company Sdn. Bhd. (Carigali HESS)

- 4) Sapura Energy Berhad (Sapura Energy)
- 5) Hess O&G Sdn. Bhd. (HESS)
- 6) Repsol O&G Malaysia Limited (RML)
- 7) EQ Petroleum Production Malaysia Ltd (EnQuest)
- 8) Vestigo Petroleum Sdn. Bhd. (VESTIGO)
- 9) PETRONAS Carigali Sdn. Bhd. (PCSB)
- 10) Conoco Phillips Company (COP)
- 11) International Petroleum Corporation (IPC)
- 12) JX Nippon Oil & Gas Exploration Ltd.
- 13) Mubadala Development Company (MDC)
- 14) Kebabangan Petroleum Operating Company (KPOC)
- 15) TOTAL Exploration & Production
- 16) RHP Mukah
- 17) Exxon Mobil Corporation (ExxonMobil)
- 18) PEXCO N.V.
- 19) Murphy Oil Corporation
- 20) Ophir Energy
- 21) Hibiscus Petroleum Berhad.

TABLE C: O&G AIR OPERATORS

- 1) Weststar Aviation Services Sdn. Bhd.
- 2) Hevilift Aviation Services
- 3) SAZMA Aviation Services

PART TWO : ROLES AND RESPONSIBILITIES – GOVERNMENT & PRIVATE ENTITIES

1.0 CIVIL AVIATION AUTHORITY OF MALAYSIA (CAAM)

- 1.1 CAAM is the SAR Authority for aeronautical incidents in Malaysia and shall be responsible for the provision of Aeronautical SAR services within Kuala Lumpur and Kota Kinabalu SRRs.
- 1.2 Aeronautical incident is defined as an incident which originates from an aeronautical source, such as an aircraft incident regardless of where the incident happens - water, air or land. However, special procedures under the respective authorities shall prevail for the following incidents:
- a) Urban/populated and built-up areas which requires emergency and disaster responses – refer to National Security Council Directive No. 20;
 - b) Airport/aerodrome whereby responsibility of the Airport Operator as stipulated in the Airport Emergency Plan (AEP) prevails;
 - c) Military aircraft where Royal Malaysian Air Force conducts the Aeronautical SAR mission with assistance from CAAM; and
 - d) Border areas of Malaysia/Indonesia - refer to the SAR Manual of Malaysia/Indonesia by the General Border Committee.
- 1.3 All requests for Aeronautical SAR service shall be made to CAAM Airport Manager or Watch Supervisors of the Air Traffic Control Centres (ATCC) who in turn will activate the ARCC/ARSC.

2.0 ARCC / ARSC

- 2.1 ARCC/ARSC is an agency established within each SRRs for the purpose of coordinating, controlling, and conducting Aeronautical SAR operations. Under the Offshore-JASAR cooperation, ARCC/ARSC shall:
- a) send the incident information to the appropriate ARCC if the incident happens outside Kuala Lumpur or Kota Kinabalu SRRs;
 - b) notify, and request available assets from the National SAR agencies;
 - c) develop SAR plan;
 - d) request details of Initial SAR activities from O&G Air Operator Emergency Coordination Centre (ECC);
 - e) send CAAM SAR representative to O&G Air Operator ECC to form a unified command;

- f) update constantly information between ECC and ARCC/ARSC to maintain an effective Joint SAR operation; and
- g) assume the role as overall commander for the Joint SAR operation.

3.0 PETRONAS

- 3.1 The Petroleum Development Act of 1974 (PDA) vested PETRONAS with the entire ownership in, and the exclusive rights, powers, liberties and privileges of exploring, exploiting, winning and obtaining petroleum lying onshore or offshore of Malaysia.
- 3.2 The duties and powers conferred to PETRONAS under the PDA is executed by Malaysia Petroleum Management also known as MPM.
- 3.3 MPM is entrusted with the responsibility of managing and steering the overall Exploration and Production (E&P) activities in Malaysia, including promoting exploration investments and facilitating the development and production activities, whilst protecting the national interest.
- 3.4 PETRONAS Communication & Control Centre (COMCEN) will communicate with PAC on behalf of MPM for updates and approvals during the SAR operations.
- 3.5 Under the Offshore-JASAR cooperation, PETRONAS through MPM shall:
 - a) appoint the Head of Emergency Crisis Management (ECM) who shall function as the coordinator between CAAM and PETRONAS to assist the Aeronautical SAR operations upon receiving notification from PETRONAS through COMCEN;
 - b) act as a coordinator/approving authority for supporting assets (air/marine) request from Petroleum Arrangement Contractors (PACs);
 - c) coordinate with CAAM for media/press releases as per PETRONAS Procedure and Guidelines for Upstream Activities (PPGUA).
- 3.5 PETRONAS shall maintain records of offshore helideck specifications for National SAR agencies. This is to enable CAAM and PETRONAS to evaluate and approve helicopter landings at O&G installation.

4.0 OIL & GAS AIR OPERATOR

- 4.1 O&G Air Operator, as a service provider shall declare the appropriate emergency phase should their assets be involved in an accident within their area of operation and notify the relevant CAAM ATS unit for ARCC/ARSC activation.
- 4.2 O&G Air Operator shall activate their ECC for initial SAR response.

5.0 OIL & GAS AIR OPERATOR ECC

- 5.1 Under the Offshore-JASAR cooperation, O&G Air Operator ECC shall be responsible to:
- a) notify the O&G Operator of the incident;
 - b) initiate Initial SAR response as the first responder;
 - c) request marine support from Offshore Installation Manager (OIM) through O&G Operator Representative;
 - d) update actions to ARCC/ARSC via SITREP;
 - e) record all action for handover to ARCC/ARSC; and
 - f) provide continued SAR assistance through usage of the assets as approved by O&G Air Operator management.

6.0 OIL & GAS OPERATORS

- 7.1 O&G Operators are the licensed operating body or company of a particular oil or/and gas field.

7.0 OIL & GAS OPERATOR ECC

- 7.1 Upon receiving information from O&G Air Operator ECC, O&G Operator ECC shall establish and be responsible to:
- a) send representative(s) to O&G Air Operator ECC to form a unified command;
 - b) alert marine assets on standby;
 - c) deploy marine assets when ill-fated aircraft has been located to carry out rescue of survivors;
(Note: Deployment of standby vessels will be based on risk assessment of leaving its primary task function as a safety and security monitoring vessel at O&G platform)
 - d) maintain communication with rescue vessels at all times;
 - e) guide marine assets to transfer survivors to the location designated by O&G Operator ECC. (as coordinated with O&G Air Operator ECC) after rescue;
 - f) notify O&G Air Operator ECC should there be a need for BODEVAC;
 - g) coordinate with PETRONAS through COMCEN on approval for National SRU helicopter to land on the platform as appropriate; and
 - h) advise marine assets to define/mark the crash site or wreckage with buoy.
- 7.2 For a prolonged SAR operation, ARCC/ARSC shall establish a direct unified command with O&G Operator ECC. O&G Operator ECC shall on best endeavour basis provide assistance to support the execution of the SAR plan.

8.0 OFFSHORE INSTALLATION MANAGER (OIM)

- 8.1 OIM is responsible for the safety of personnel and assets at his platform. He shall lead the emergency response team in coordination with O&G Operator ECC in the event of an aeronautical incidents within his area of responsibility.
- 8.2 OIM responsibilities include (but not limited to):
- a) coordinate with O&G Air Operator's Radio Operator (RO) and O&G Incident Commander (IC);
(Note: IC is a designated person onshore appointed to lead the O&G Operator ECC and to manage all emergency event/response as stated in the respective O&G Operator Emergency Response Plan (ERP))
 - b) initiate aircraft crash ERP;
 - c) assemble Site Emergency Response Team (SERT);
 - d) alert nearby vessels and platforms; and
 - e) assess risk and approve the deployment of dedicated standby vessel for the SAR mission.

9.0 NATIONAL SAR AGENCY

- 9.1 Aeronautical SAR operations shall be headed and coordinated by the respective ARCC/ARSC in the Kuala Lumpur and Kota Kinabalu SRRs and assisted by the National SAR Agencies:
- a) Malaysia Maritime Enforcement Agency (MMEA)
 - b) Royal Malaysian Navy (RMN)
 - c) Royal Malaysian Air Force (RMAF)
 - d) Royal Malaysian Police (RMP)
 - e) Fire and Rescue Department of Malaysia (FRDM)
 - f) Other relevant agencies as listed in NAMSAR
- 9.2 They are responsible for providing vessels, aircrafts, other relevant assets and personnel, for the purpose of assisting and supporting Aeronautical SAR operations, and providing communication and logistic facilities, when required.

PART THREE : OFFSHORE JOINT AERONAUTICAL SAR (Offshore-JASAR) OPERATIONS

1.0 CONCEPT OF OPERATIONS

- 1.1 The survivability of a person in distress would depend on various factors. The most important factor to be considered will be the time taken to locate and rescue the person concerned.
- 1.2 Offshore-JASAR ascertains the roles and responsibilities of all parties commencing from the initial SAR operation to Joint SAR operations with the emphasis on command, control, coordination and communications between government and private entities.

2.0 ALERTING UNIT

- 2.1 CAAM Air Traffic Services Unit (ATSU) shall notify O&G Air Operators' RO if the Incident/Accident occurs within Controlled Airspace.
- 2.2 O&G Air Operators' RO shall notify CAAM ATSU if the Incident occurs outside Controlled Airspace.

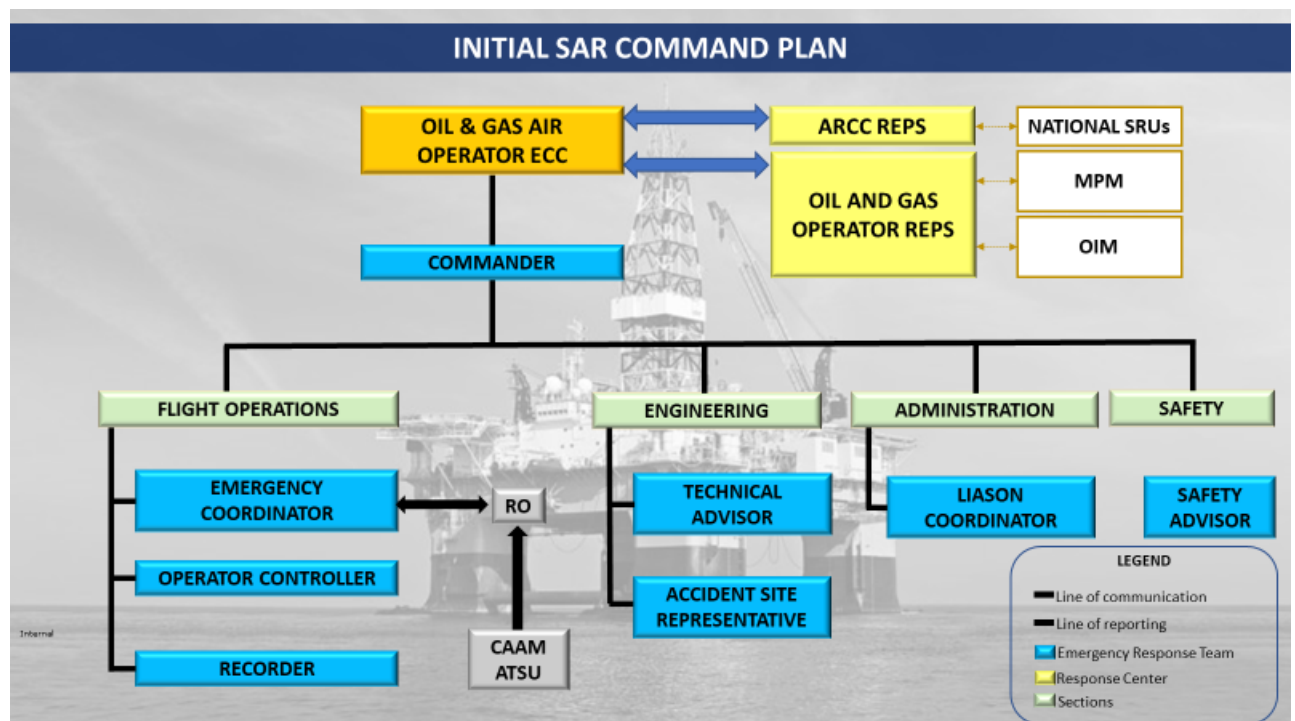
3.0 DECLARING EMERGENCY PHASES

- 3.1 The initial declaration of an emergency phase shall be the responsibility of the controlling unit, either the ATCC, any ATSU or the O&G Air Operator RO. Subsequent SAR phase shall be declared by the SMC on activation of ARCC/ARSC.
- 3.2 Emergency phase: A generic term used, as the case may be, uncertainty phase, alert phase or distress phase. (ICAO Annex 11 & 12);
 - a) uncertainty phase - A situation wherein uncertainty exists as to the safety of an aircraft and its occupants.
 - b) alert phase - A situation wherein apprehension exists as to the safety of an aircraft and its occupants.
 - c) distress phase - A situation wherein there is reasonable certainty that an aircraft and its occupants are threatened by grave and imminent danger or require immediate assistance.

4.0 INITIAL SAR RESPONSE

- 4.1 In accordance with the Offshore-JASAR SOP, the initial SAR response is provided by the O&G Air Operators ECC, leading the SAR operations in coordination with O&G Operators for their assets.
- 4.2 During the initial SAR response, O&G Air Operators ECC shall coordinate and deploy available helicopters for the search operations. These helicopters may have limited SAR capabilities.
(Note: Limited SAR - The limited SAR capabilities that has been assigned and defined by contract to O&G Air Operator)
- 4.3 O&G Operators ECC shall coordinate and deploy marine assets and relay updates to the O&G Air Operator ECC.
- 4.4 ARCC/ARSC Representative (CAAM SAR personnel) at the O&G Air Operators ECC shall serve as the link between Government agencies and private entities during the initial SAR response.

5.0 INITIAL SAR COMMAND PLAN



Note: RO – Radio Operator

OIM – Offshore Installation Manager

MPM – Malaysia Petroleum Management

5.1 Immediate Response Plan:

- a) O&G Air Operator shall coordinate and lead the initial SAR response through their ECC;
- b) the O&G Air Operator ECC shall be assisted by representatives from ARCC/ARSC and the O&G Operator is to facilitate a safe and coordinated Joint SAR Operation;
- c) O&G Air Operator ECC shall assume the role as the primary response centre to coordinate and command the initial search initiatives prior to National SRUs deployment; and
- d) O&G Air Operator and O&G Operator shall exercise their ownership and use any available assets within their operation area to carry out the initial search operations.

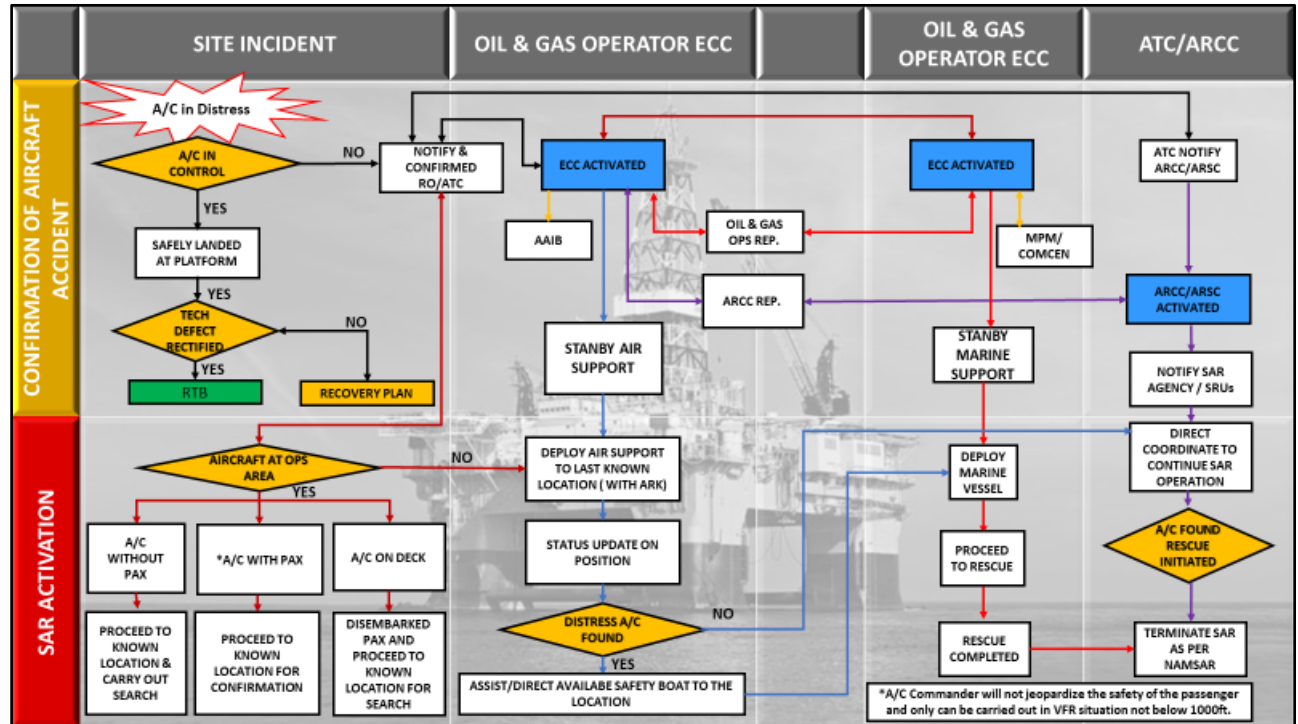
5.2 National SRUs Deployment Response Plan:

- a) ARCC/ARSC shall assume the role of the overall commander of the Joint SAR operations once the National SRUs have been deployed;
- b) a clear Hand Over Take Over (HO-TO) protocol shall take place between ARCC/ARSC and O&G Air Operator ECC to indicate the current Commander of the search operation;
- c) ARCC/ARSC representative shall coordinate with O&G Air Operator ECC on matters related to ARCC/ARSC SAR plan;
- d) O&G Operators representative in coordination with ARCC/ARSC representative shall guide their marine assets to assist in the rescue operations; and
- e) ATC shall assist O&G Air Operator's RO in providing air traffic advisory service to the SRU assets deployed within the area of operations.

(The Initial SAR Command Plan flow chart can be found in Appendix I)

PART FOUR : Offshore-JASAR: COORDINATION & COMMUNICATION PLAN

Offshore-JASAR COORDINATION PLAN



Note: AAIB – Air Accident Investigation Bureau Malaysia

1.0 SITE INCIDENT

1.1 The Distress Aircraft shall not be classified as an accident when:

- Aircraft lands safely at an offshore installation/platform; and/or
- Aircraft safely returns to base.

1.2 Confirmation of Aircraft Accident:

- Activation of CRASH ALARM by O&G Air Operators' RO shall be in accordance with below protocol:
 - CAAM ATSU shall notify O&G Air Operators' RO if the Incident/Accident occurs within Controlled Airspace.
 - O&G Air Operators' RO shall notify CAAM ATSU if the Incident/Accident occurs outside Controlled Airspace.

1.3 Offshore-JASAR Activation: During initial SAR response, air assets would be coordinated and deployed by O&G Air Operator ECC.

1.4 Action by aircraft operating within the offshore operations area:

- Aircraft without Passengers

- i. Upon receiving instructions from the Emergency Coordinator (“EC”), O&G Air Operator’s RO shall instruct their aircraft to proceed to the last known location of the distressed aircraft to carry out the search.
- b) Aircraft with Passengers
 - i. Upon receiving instructions from the EC, O&G Air Operator’s RO shall instruct the aircraft to proceed to the last known location of the distressed aircraft for confirmation.
 - ii. Aircraft Commander shall not jeopardise the safety of the passengers and flight shall be conducted in VFR, not below 1000ft.
- c) Aircraft on Deck
 - i. Upon receiving instructions from the EC, the aircraft commander using his discretion shall notify the Helicopter Landing Officer (“HLO”) to disembark passengers and proceed to last known location of the distressed aircraft to carry out the search.

2.0 OIL & GAS AIR OPERATOR ECC

2.1 Upon hearing the CRASH ALARM:

- a) O&G Air Operator ECC Commander shall activate and man the O&G Air Operator ECC Room; and
- b) O&G Air Operator ECC members shall assemble at O&G Air Operator ECC Room as soon as possible.

2.2 O&G Air Operator ECC shall establish communication with ARCC/ARSC and the respective O&G Operator representatives.

2.3 O&G Air Operator ECC shall prepare aircraft with ARK capabilities for air support should the need arises.

2.4 Standby air support will be deployed when:

- a) no asset available at the offshore operations area; or
- b) upon confirmation that search aircraft (as per 1.4 above), Heli raft has not been deployed by the distressed aircraft.

2.5 O&G Air Operator ECC shall coordinate with the O&G Operator’s representative to establish communication between search aircraft and rescue vessels when survivors had been sighted.

2.6 O&G Air Operator ECC shall update the ARCC/ARSC representative on the progress of initial SAR activities.

- 2.7 Once the ARCC/ARSC notifies the O&G Air Operator ECC that the National SRUs is ready for deployment, the O&G Air Operator ECC shall handover command of the SAR operations to ARCC/ARSC.

3.0 OIL & GAS OPERATOR ECC

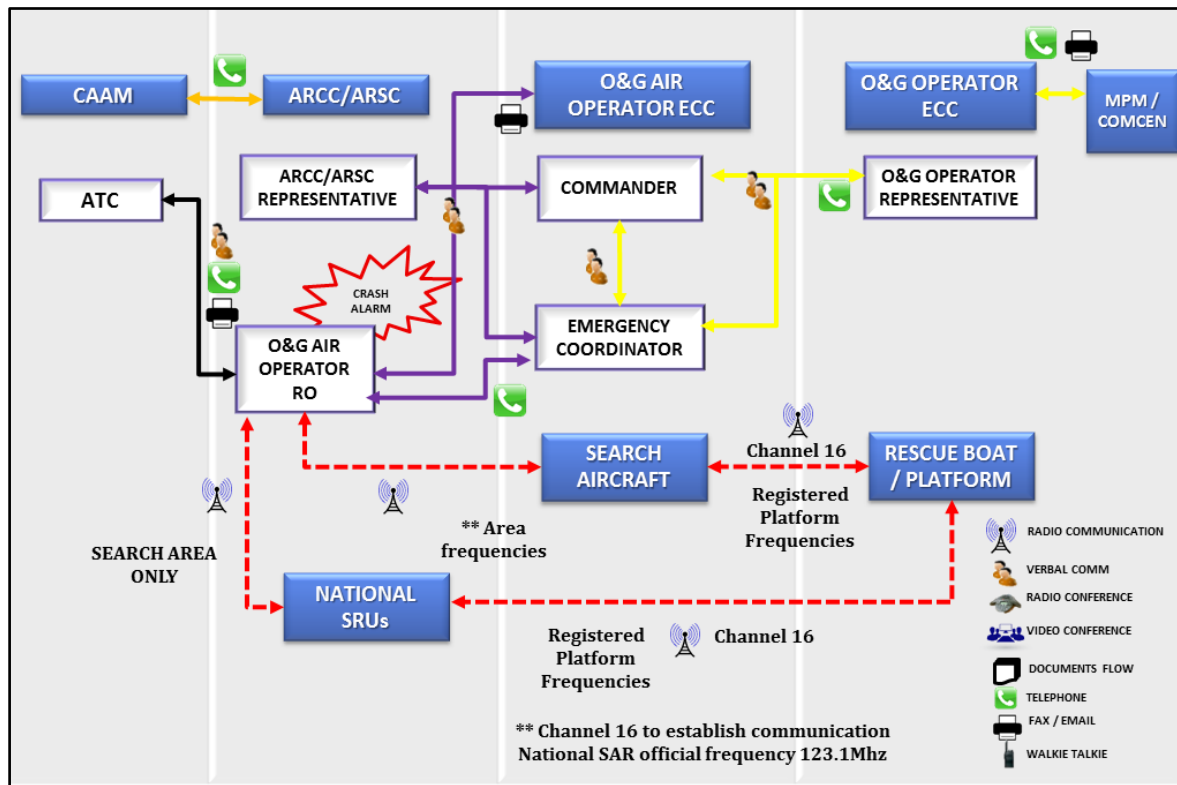
- 3.1 Upon being notified by O&G Air Operator's ECC, O&G Operator's ECC shall alert the marine assets to be on standby for marine support.
- 3.2 O&G Operator's ECC shall coordinate and deploy marine assets to the location determined by the O&G Air Operator's ECC. The progress and update shall be passed to the O&G Air Operator's ECC.
- 3.3 Marine assets shall coordinate with the search aircraft the rescue operation. These operations shall be monitored by O&G Air Operator's ECC.
- 3.4 Upon completion of rescue operations, the marine assets shall notify the O&G Operator ECC. O&G Operator ECC shall then notify O&G Air Operator ECC for the termination of SAR operation by ARCC/ARSC.

4.0 ACTION BY ATC/ARCC/ARSC

- 4.1 During the initial SAR response initiated by the O&G Air Operator ECC:
- a) CAAM SAR representative shall proceed to the O&G Air Operator ECC who shall assume the role as ARCC/ARSC Liaison Officer (LO);
 - b) ARCC/ARSC representative shall assist the O&G Air Operator ECC's Commander, providing constant update of information to ARCC/ARSC in order to maintain an effective Joint SAR operation;
 - c) ARCC/ARSC shall request available assets from the National SAR agencies.
- 4.2 Upon National SAR SRUs becoming available:
- a) ARCC/ARSC shall deploy available SRU to the operation area;
 - b) ARCC/ARSC shall assume command of the search operation;
 - c) A clear Hand Over Take Over (HO-TO) protocol shall take place between ARCC/ARSC and O&G Air Operator ECC to indicate the current Commander of the search operation;
 - d) ATC shall assist O&G Air Operator's RO in providing air traffic advisory service to the SRUs assets deployed within the search area; and
 - e) ARCC/ARSC representative together with the O&G Air Operator ECC Commander shall be responsible for SAR operation including deployment and control of marine assets;

(The Offshore-JASAR Coordination Plan flow chart can be found in Appendix II)

Offshore-JASAR COMMUNICATION PLAN



5.0 ATC/ARCC/ARSC COMMUNICATION PLAN

- 5.1 Communication of information from ATC to O&G Air Operator's RO or vice versa shall be through phone line during the initial SAR operation.
- 5.2 O&G Air Operator's RO would use the format of CAAM's Safety 01 Form for their official reporting which shall be faxed/email to O&G Air Operator ECC and CAAM's ATSU.
- 5.3 In the event the O&G Air Operator's tracking system indicates discrepancies, the O&G Air Operator's RO may seek assistance from CAAM's ATSU to verify the position of their aircraft.

6.0 OIL & GAS AIR OPERATOR ECC COMMUNICATION PLAN

- 6.1 All communications within O&G Air Operator ECC members would be through verbal communication except for field members, the communication would utilise walkie-talkie/telephone/satellite phone/radio/any other means.
- 6.2 All event logs by O&G Air Operator ECC members would be given to the 'Recorder' through a Log Event Chit for all event updates.

- 6.3 Communication between O&G Air Operator's ECC and ARCC/ARSC shall be via ARCC/ARSC representative.
- 6.4 Communication between O&G Air Operator's ECC and O&G Operator ECC shall be through O&G Operator's representative.
- 6.5 O&G Air Operator's search aircraft would initially utilise Channel 16 to communicate with O&G Operator's marine assets. Subsequent frequency for communication would be determined by O&G Operator's marine assets.
- 6.6 O&G Air Operator's search aircraft communication with offshore installation/platform would utilise registered frequencies for the respective offshore installation/platform.
- 6.7 Communication between O&G Air Operator's RO and O&G Air Operator's search aircraft shall utilise the Helibase frequency.

7.0 OIL & GAS OPERATOR ECC COMMUNICATION PLAN

- 7.1 O&G Operator will communicate with PETRONAS through COMCEN for updates and approvals during the SAR operations.

(The Offshore-JASAR Communication Plan flow chart can be found in Appendix III)

PART FIVE : Offshore-JASAR: RESCUE PROCEDURES

1.0 RESCUE BY NATIONAL SRU

- 1.1 Fatalities – The deceased person shall be sent to the nearest government hospital.
- 1.2 Survivors - ARCC/ARSC would coordinate with O&G Operator's representative to determine the disembarkation point for survivors.

2.0 RECOVERY BY O&G OPERATOR AT THE OFFSHORE INSTALLATION/ PLATFORM

- 2.1 Fatalities - O&G Operator would follow their SOP for handling BODEVAC.
- 2.2 Survivors - ARCC/ARSC would coordinate with O&G Operator's representative to determine the disembarkation point for survivors.

PART SIX : Offshore-JASAR: SUSPENSION OF Offshore-JASAR / TERMINATION OF SAR

1.0 SUSPENSION of Offshore-JASAR

- 1.1 The ARCC/ARSC's SAR Chief shall suspend the Offshore-JASAR cooperation, when:
- a) ARCC/ARSC assume total command of the search operation from the O&G Air Operator's ECC and O&G Operator's ECC;
 - b) National assets are conducting the SAR operation. At this stage, assets from private entities would no longer be required.

2.0 TERMINATION of SAR OPERATIONS

- 2.1 CAAM's Chief Executive Officer (CEO) shall terminate an aeronautical SAR operation when:
- a) all survivors have been found, rescued or accounted for; or
 - b) a decision has been made that further search cannot be justified or all reasonable hope of rescuing survivors has passed.
- 2.2 The SMC of the appropriate ARCC/ARSC shall notify the all agencies and SRU concerned, that were earlier alerted, of the termination and the reason for the cessation of SAR activities.

PART SEVEN : Offshore-JASAR: FINANCIAL IMPLICATION

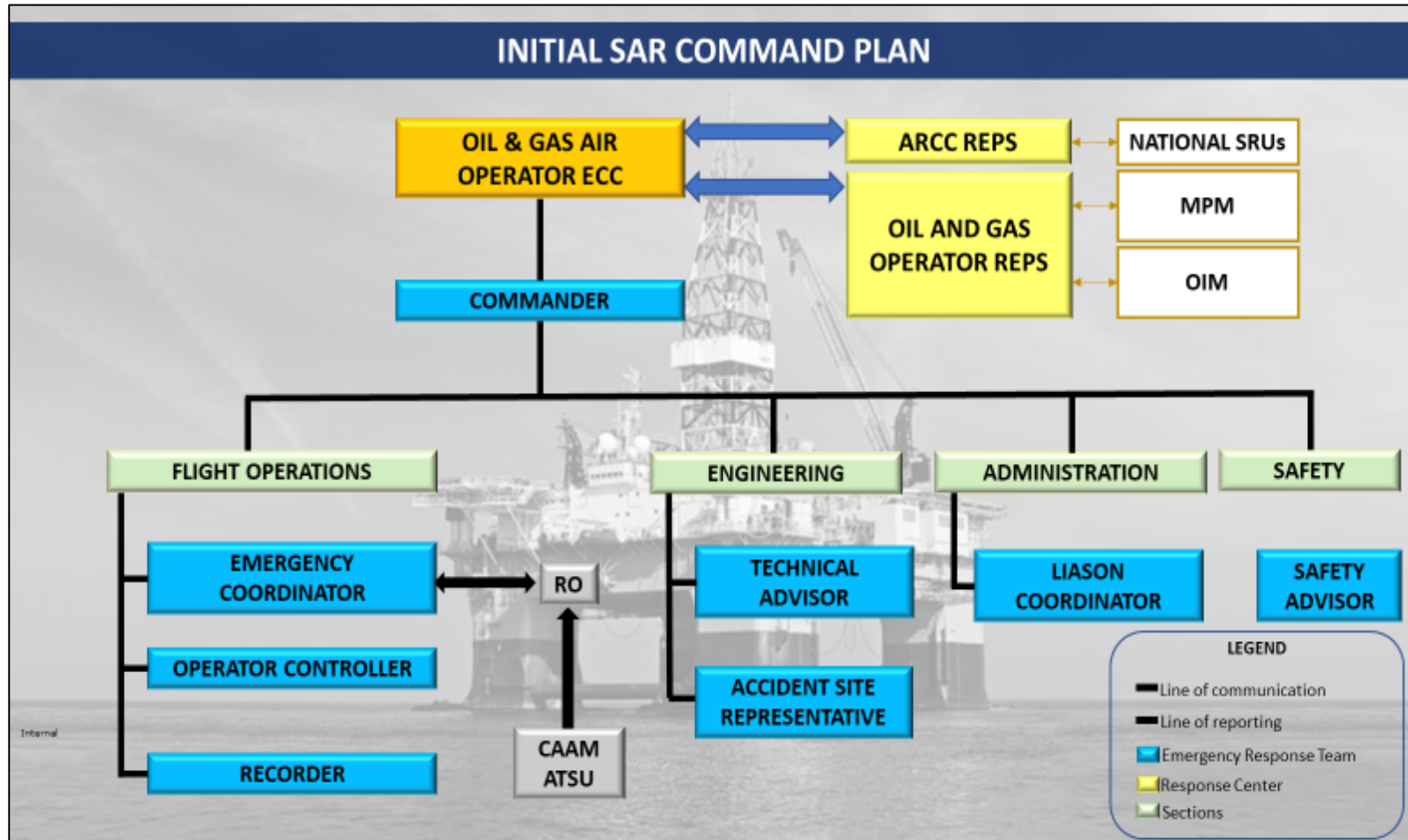
1.0 INITIAL SAR RESPONSE

- 1.1 O&G Air Operator or O&G Operator may respond to the initial SAR response via the Offshore-JASAR cooperation including deploying any air or marine assets on voluntarily basis.
- 1.2 Any cost/expenses incurred for deploying the air or marine assets by the O&G Air Operator and/or O&G Operator shall be on the O&G Air Operator or O&G Operator respectively, and shall not be reimbursed by PETRONAS.

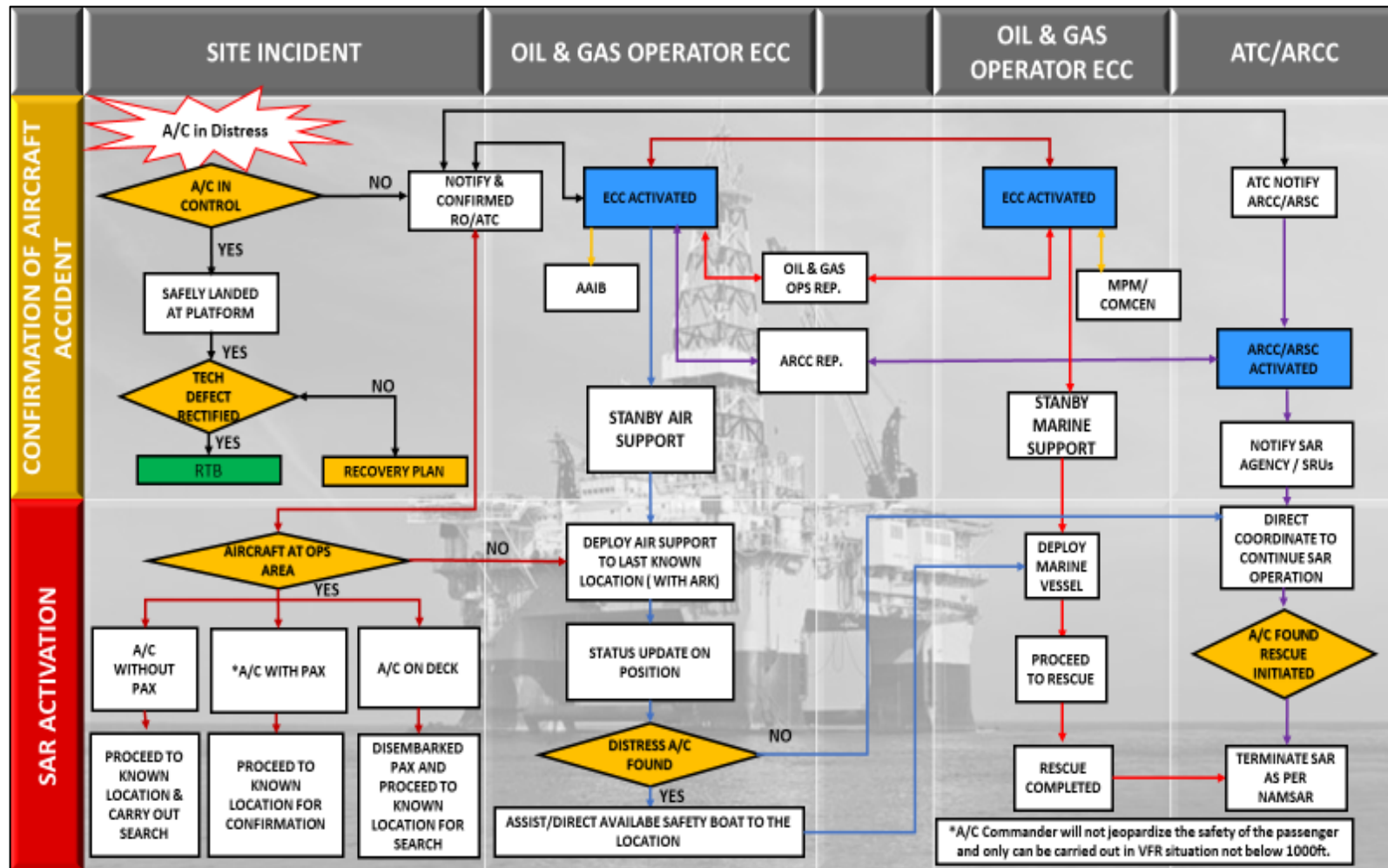
2.0 PROLONGED SAR

- 2.1 Deployment of the air or marine assets by the O&G Air Operator or O&G Operator shall be subject to PETRONAS approval based on case to case basis.
- 2.2 O&G Operator may on voluntarily basis, contribute the use of their marine assets in the continuation of SAR operation which costs shall not be reimbursed from PETRONAS.

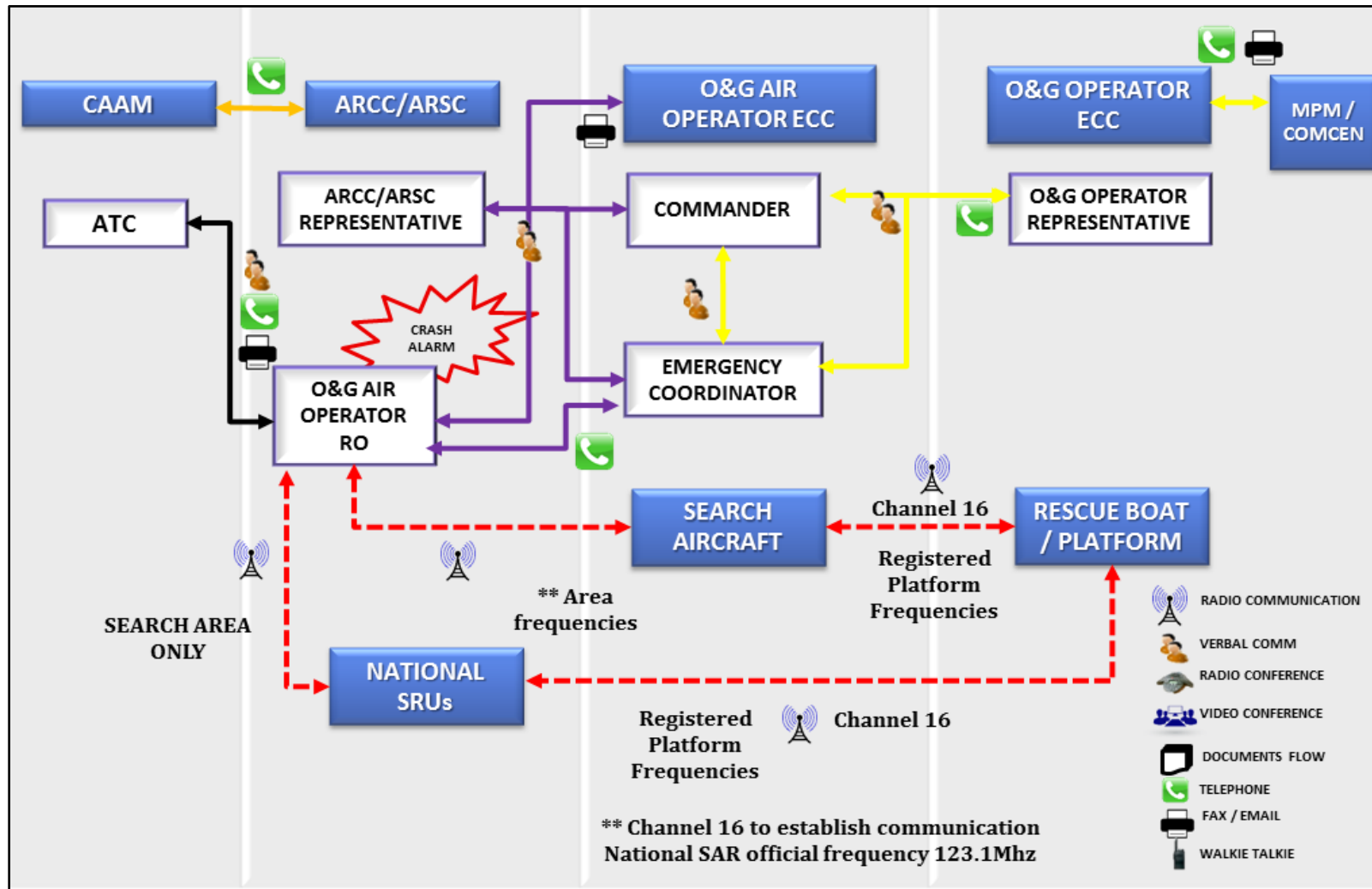
Offshore-JASAR: Initial SAR Command Plan



Offshore-JASAR Coordination Plan



Offshore-JASAR Communication Plan



Kuala Lumpur, Kota Kinabalu & Adjacent Aeronautical SRRs

