ICAO Inter-regional SAR Workshop 2016

Global Aeronautical Distress and Safety System (GADSS) - Implications for Search And Rescue Services

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What happens when…

your transoceanic flight becomes oceanic?

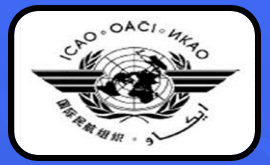
International SAR Organization

International Maritime Organization

International Convention on Maritime Search and Rescue (1979)

International Civil Aviation Organization

Convention on International Civil Aviation (1944)



Global SAR Plan

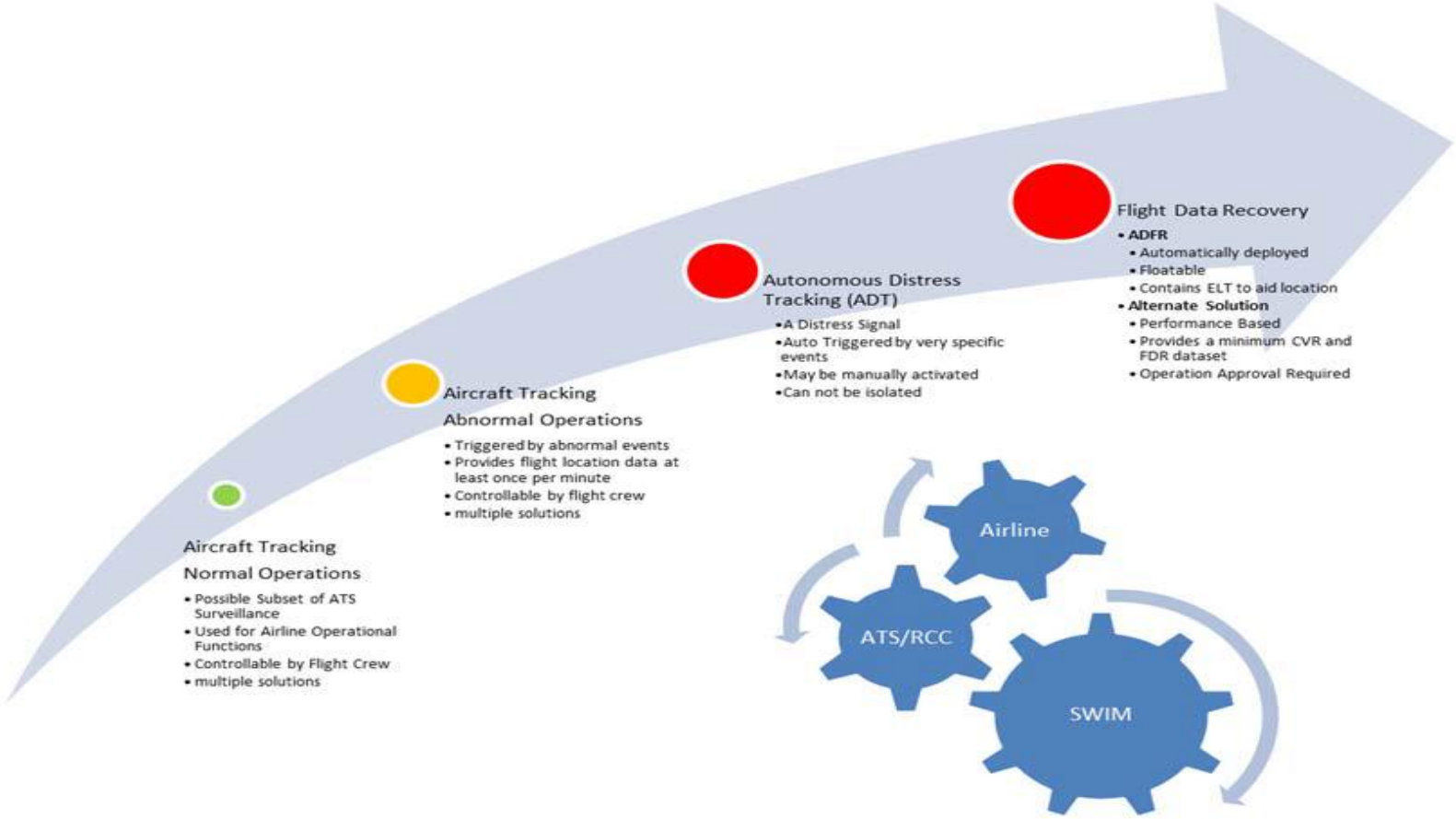
International Aeronautical & Maritime SAR (IAMSAR) Manual

Regional Air Nav Plans (7)

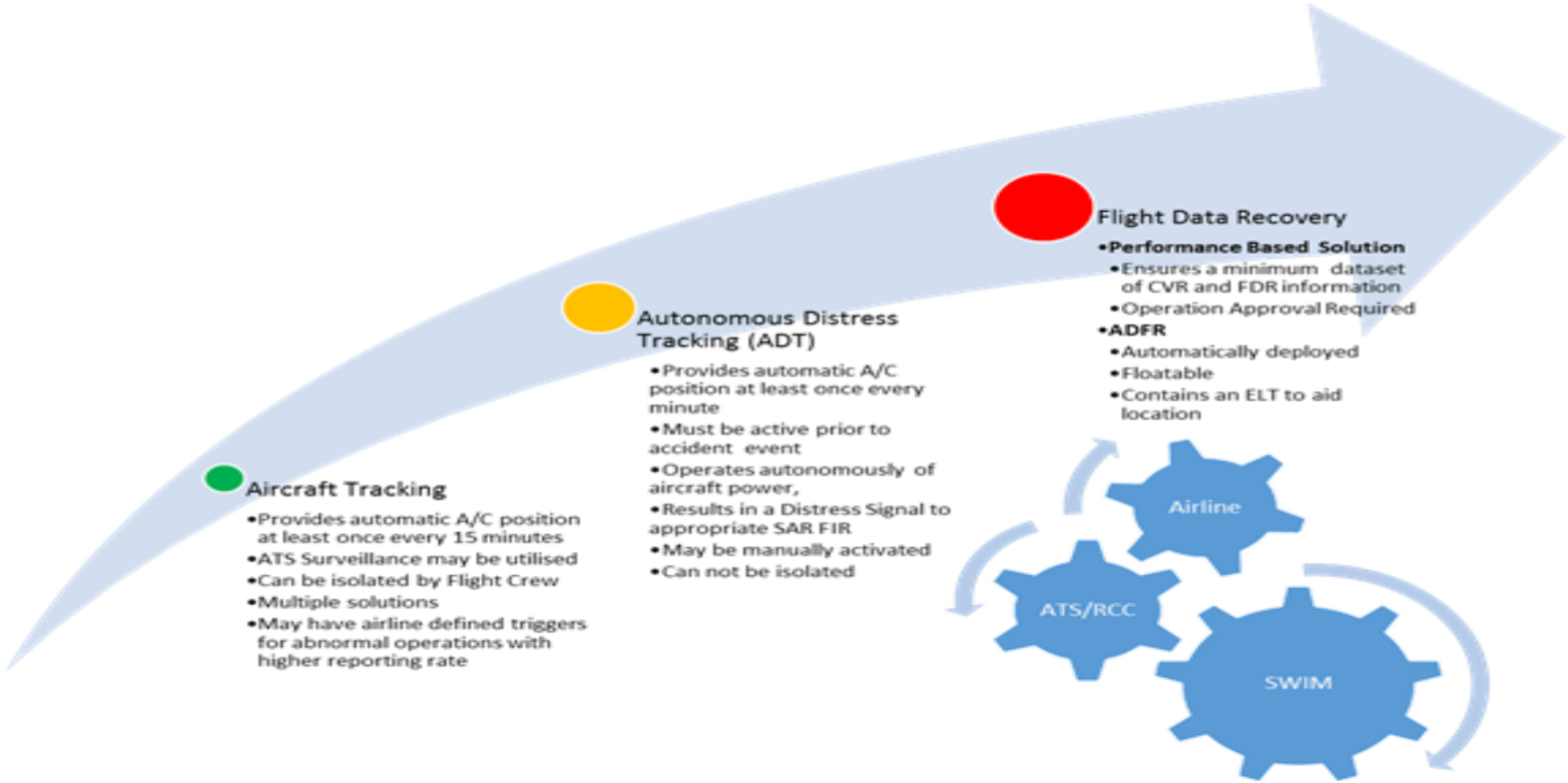
GADSS…The Beginning: ICAO HQ initiative

- The disappearance of Malaysia Airlines flight MH370 on 8 March 2014, en-route from Malaysia to China, triggered an extensive search until 2016.
- In 2009, a two-year search was required to recover the flight data recorders of Air France flight 477 which was lost in the Atlantic Ocean en-route from Brazil to France.
- The GADSS concept of operations describes the actions which may be taken in the short-, medium- and long-term to address the global tracking of flights.

GADSS main components:



GADSS evolution into 3 functions?



Operator responsible for aircraft tracking

- **Normal Tracking position reports by 2018: 4D/15**
  - **4 Dimension position: Latitude, Longitude, altitude and time at 15 minute intervals or less**
  - **Operator obtains OR Sent from aircraft to ATS**
- **Distress Tracking position reports by 2021: 4D/1 at least once per minute for duration of flight**
- **Autonomous distress tracking (ADT): broadcast position information independent of aircraft power or systems (an independent facility on board)**

Current roles within aeronautical community

- Aircraft operator (owner or company)
  - 'missed report' to ATSU
  - distress alert/report' to ATSU
- Air traffic services unit (ATSU) – normal role
  - advised of emergency by ATS system, operator, pilot, others
  - notify the RCC (ARCC/MRCC/JRCC)
  - notify/advise the operator
- Aeronautical Rescue Coordination Center (ARCC)
  - coordinate SAR response or hand off to MRCC

Roles between aero and SAR community – current and to be developed

- Operator-ATS: Good now; bigger role for operator
- ATS- ARCC: Depends on the country
- ARCC-MRCC (JRCC?): Need to verify
- ATS-JRCC or MRCC: verify lead RCC
- Operator-JRCC or MRCC: not much now but could be critical in the future

Alert Distribution/Routing – to be developed

- 'Other technology' – Operator or ATS gets once-a minute reports BUT alerts may fall outside of current distress routing system. Which aero system? Back-up?
- 406 MHz ELT-Distress Tracking (ELT-DT)
  - New style ELT (no homing signal); alerts could be automatically sent through Cospas-Sarsat data distribution network
- "Other Technology" should be as good as Cospas-Sarsat standard for 'Activation of alert-to-RCC"

Things for You to Think About

- Your gaps in surveillance (radar coverage) - remote areas in Africa, Asia, Middle East and oceanic areas
- Automatic Dependent Surveillance-Broadcast (ADS-B) on "Iridium NEXT" satellites being launched starting September 2017.
  - Enables Aireon's ADS-B satellite-based system to provide global aircraft surveillance in real time.
- 406 MHz ELT-Distress Tracking (ELT-DT) 4D/1 alerts direct to RCC
- Your ATS and rescue coordination centers reaction?

Now we can get back to our normal seas –

…plus working with our aeronautical buddies