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IMO INTERNATIONAL MARITIME ORGANIZATION

ICAO Asia/Pacific SAR WG 9
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Agenda Item 4 Asia/Pacific and inter-regional SAR planning, coordination and cooperation

Autonomous Distress Tracking (ADT) Update

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ADT can greatly assist SAR in the oceanic regions and remote land regions (limited ATC surveillance)

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FLASH UPDATE

- Autonomous distress tracking (ADT) is another means of notification about large aircraft in flight
- ADT infrastructure not fully in place
- ADT devices now flying – ELT- Distress Tracking
- Europe and United States have operational experience based on false alerts

Documents applicable for ADT implementation

- ICAO Annex 6 (ICAO technical requirement)
- IAMSAR Manual 2022 edition:
  - Volume I Appendix G
  - Volume II Appendix V
- ICAO Document 10165 Manual on the Global Aeronautical Distress and Safety System (mid-2024)
- IMO COMSAR Circular.59/Rev.1 [distributed to RCCs]

ADT details

- Specific type of device but not technology-specific
- New-built long-haul aircraft, cargo and passenger, starting 1 January 2024
- For aircraft in flight
- Requirement is for the aircraft operator (company) to receive the information but…details later
- Intent is to retain ICAO Annex 11 alerting process

ADT details, continued

- ADT device triggered (activated) manually by the pilot; OR,
- Automatically based on “aircraft behavior events” including:
  - Unusual attitudes
  - Unusual speed conditions
  - Collision with terrain
  - Total loss of thrust/propulsion on all engines and ground proximity warning

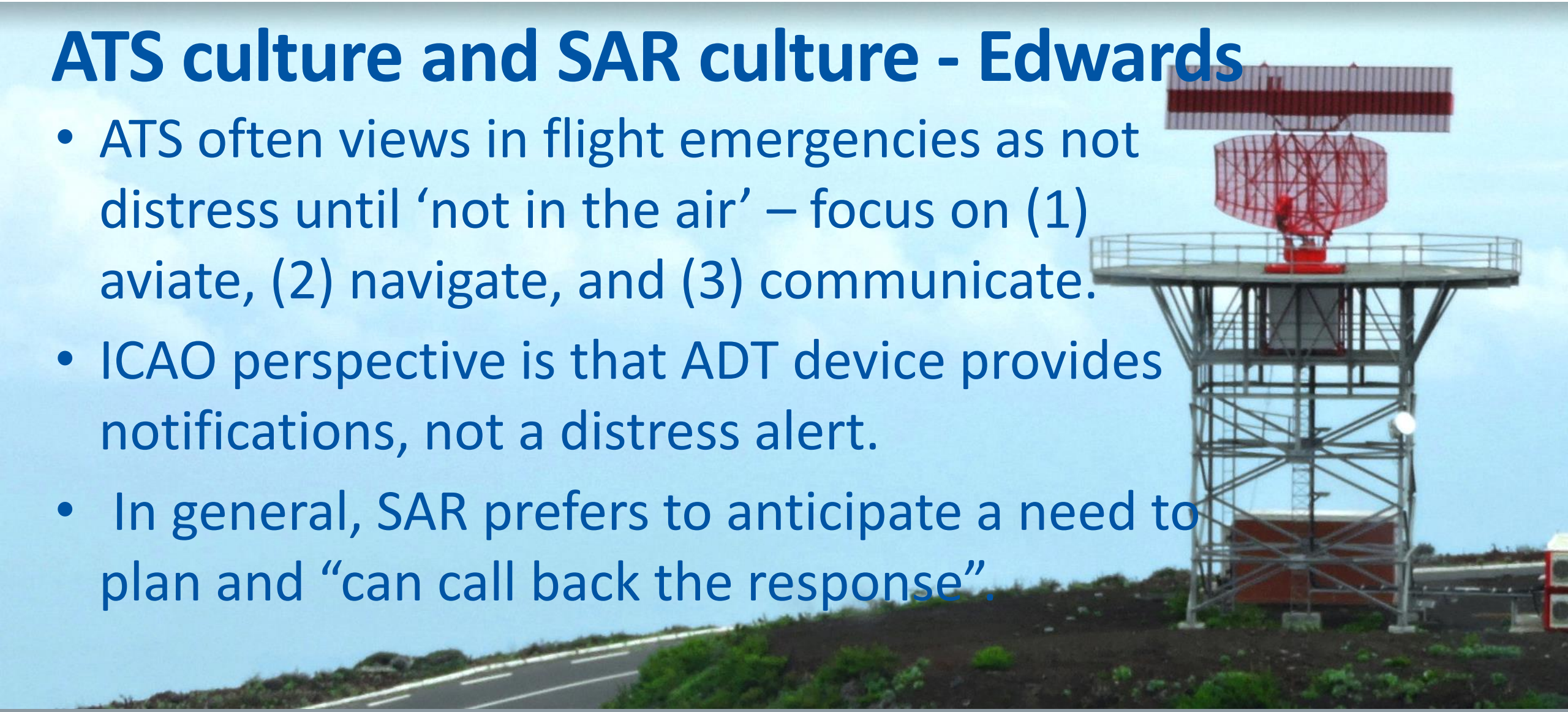
ADT details, continued

- ICAO is establishing the ‘location of an aircraft in distress repository (LADR)’ to make available ADT information
- LADR would **notify** subscribers (operator, ATS unit and RCC) it has ADT info – LADR does not send the ADT message
- Stakeholders need to log into the LADR for the information
- ELT(DT is an ADT device, it is NOT an ELT distress alert
- ELT(DT) message goes to RCC/SPOC **and** the LADR
- ATS culture can be different from SAR culture

 - Notification vs alert - in flight emergency vs SAR

ATS culture and SAR culture - Edwards

- ATS often views in flight emergencies as not distress until ‘not in the air’ – focus on (1) aviate, (2) navigate, and (3) communicate.
- ICAO perspective is that ADT device provides notifications, not a distress alert.
- In general, SAR prefers to anticipate a need to plan and “can call back the response”.



ADT components for now

1. ADT device and message – the ELT(DT)
2. Supporting infrastructure – [LADR and OPS Control Directory in near future]
3. Operational procedures among stakeholders
4. Message distribution: Cospas-Sarsat Mission Control Center (MCC)

Operations Control Directory (OPS CTRL)

1. ICAO's single global database of contact details for ATS units and operators. Soon RCCs will be part of this and gain access
2. Access to OPS CTRL will lead to access to the LADR
3. Future ICAO State letter coordinated by FAA on how to provide contact details and gain access
4. More guidance is in ICAO Doc 10165.

Location of an aircraft in distress repository (LADR)

1. LADR often pronounced as “Ladder”
2. LADR is a geographic display showing an icon for each ADT notification in the flight information region
3. ADT and other information is sent to the LADR
4. LADR operational by mid-2024. Pends ICAO State letter
5. RCCs are required- by ICAO Annex 12 – *Search and Rescue*, to subscribe to the LADR - subscription is free

LADR content

1. LADR is the central repository for all information
2. Info from the ADT device plus other info that could be uploaded
3. Mandatory ADT information is:
   - .1 latitude and longitude;
   - .2 date and time (both transmission and receipt);
   - .3 operator 3-letter designator (3LD); and
   - .4 aircraft identification (aircraft nationality & registration mark...
4. Optional info [from SIT 185] includes altitude; ELT(DT) Hex ID; and activation method (manual or automatic).

ELT(DT) and LADR

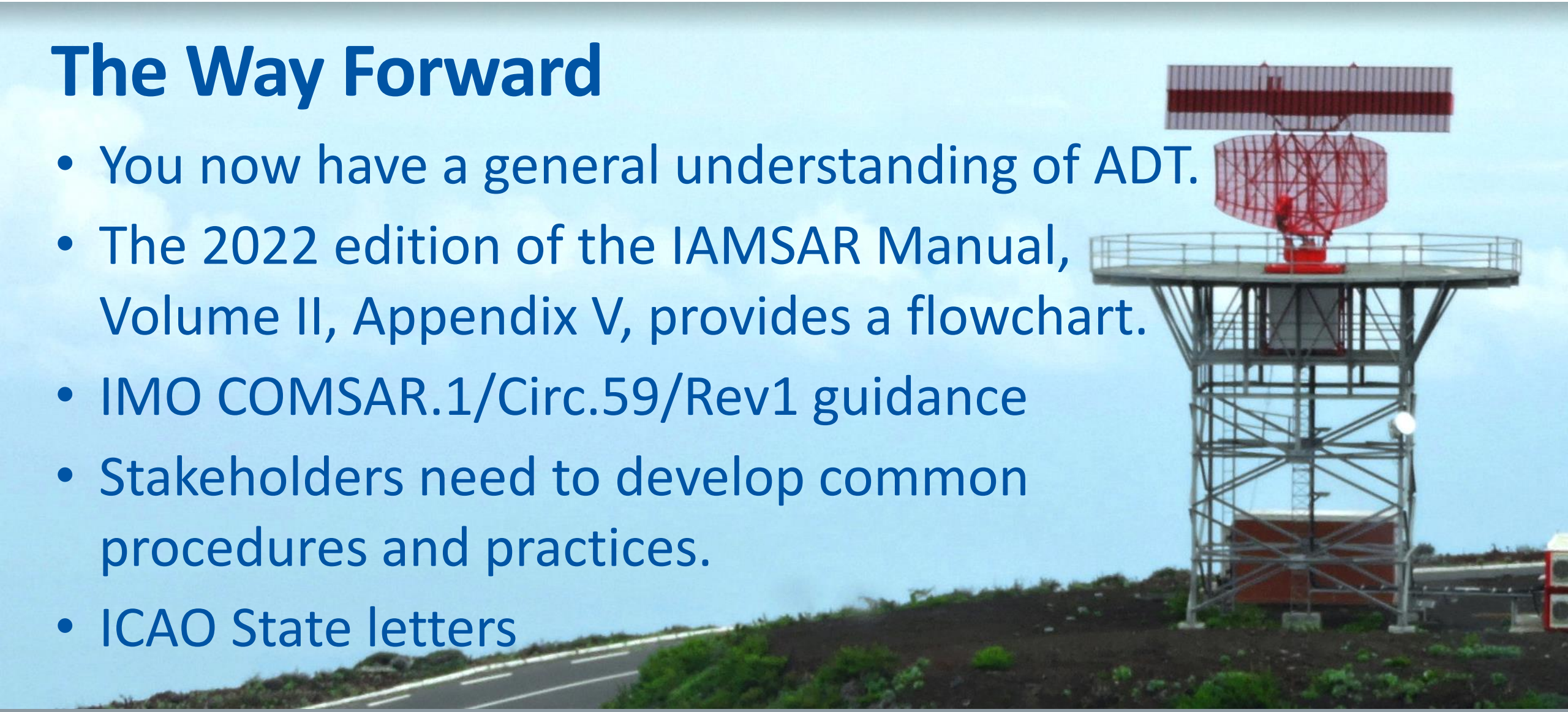
1. ELT(DT) is the only ADT device in use. Sends Cospas-Sarsat SIT 185 formatted message to RCCs, NOT to Operator but maybe to air traffic services unit if it is designated as a SAR Point of Contact (SPOC).
2. When LADR available, the SIT 185 message will NOT go into the LADR but ADT data parts of the information will
3. Reception of SIT 185 is identical but ELT(DT) text is a bit more specific. Might need to adjust current RCC procedures for reception of LADR notification

North Atlantic ADT Exercise (NAT DISTREX)

1. Europe and North America planning exercise once LADR is ready (April 2024 or later)
2. FAA leading U.S. project team, includes maritime and aeronautical RCCs
3. Objectives include:
    1. Test notification process among all 3 stakeholders
    2. Evaluate notification process and actions taken
    3. Identify any gaps in current processes and recommendations to address

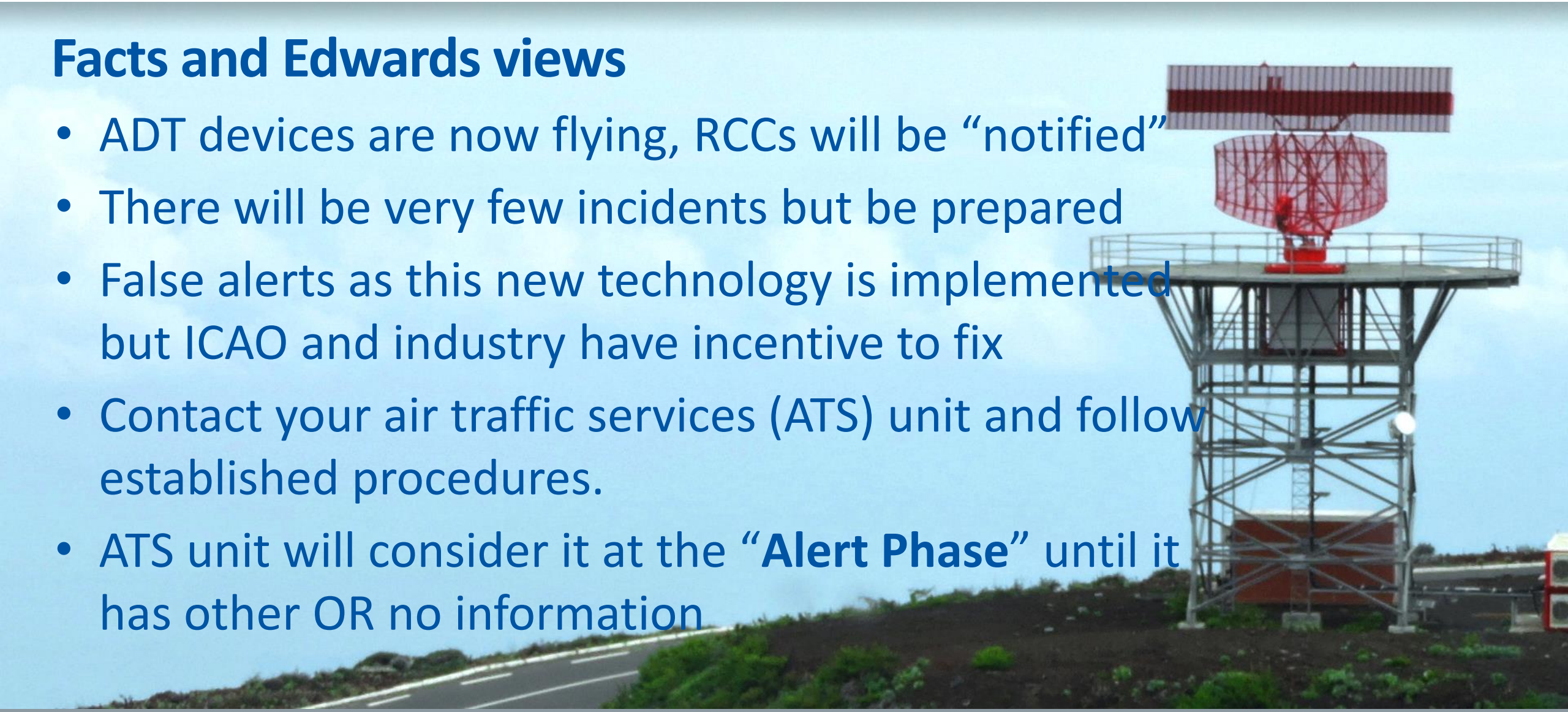
The Way Forward

- You now have a general understanding of ADT.
- The 2022 edition of the IAMSAR Manual, Volume II, Appendix V, provides a flowchart.
- IMO COMSAR.1/Circ.59/Rev1 guidance
- Stakeholders need to develop common procedures and practices.
- ICAO State letters



Facts and Edwards views

- ADT devices are now flying, RCCs will be “notified”
- There will be very few incidents but be prepared
- False alerts as this new technology is implemented but ICAO and industry have incentive to fix
- Contact your air traffic services (ATS) unit and follow established procedures.
- ATS unit will consider it at the “**Alert Phase**” until it has other OR no information



Facts and Edwards views, continued

- ADT devices transmit info at least every minute
- ATS units and RCCs will not get them every minute
  - Only one LADR notification (by email) when approaching or in FIR and associated SAR region
  - Cospas-Sarsat notifications are rapid at first and then periodic (see Cospas-Sarsat MCC guidance)
- ATS unit and RCC decide who calls the other