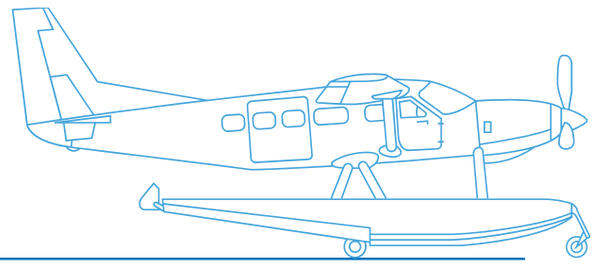
146/148/DDH Seminar

19 NOVEMBER 2020

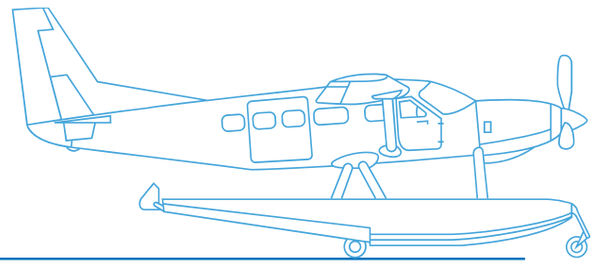
CIVIL AVIATION AUTHORITY
OF NEW ZEALAND
Te Mana Rererangi Tūmatanui o Aotearoa

Welcome

Jason Ashworth - Certification Manager, Aircraft and Product



CAA Restructure in July 2020



Shelley Turner

Acting CEO and Director of Civil Aviation

Dean Winter

Acting DCE Aviation Safety

John Kay

DCE System and Practice Design

John Kay

Acting DCE Organisational Development and Support

Chris Ford

DCE Aviation Security and Infrastructure

Cathy Robinson

Acting DCE Performance Monitoring and Assurance

Dean Winter

Acting DCE Aviation Safety

Di Cooze

Manager Investigation and Response

David Harrison

Acting Manager Certification

David Harrison

Manager Licensing and Standards

Steve Kern

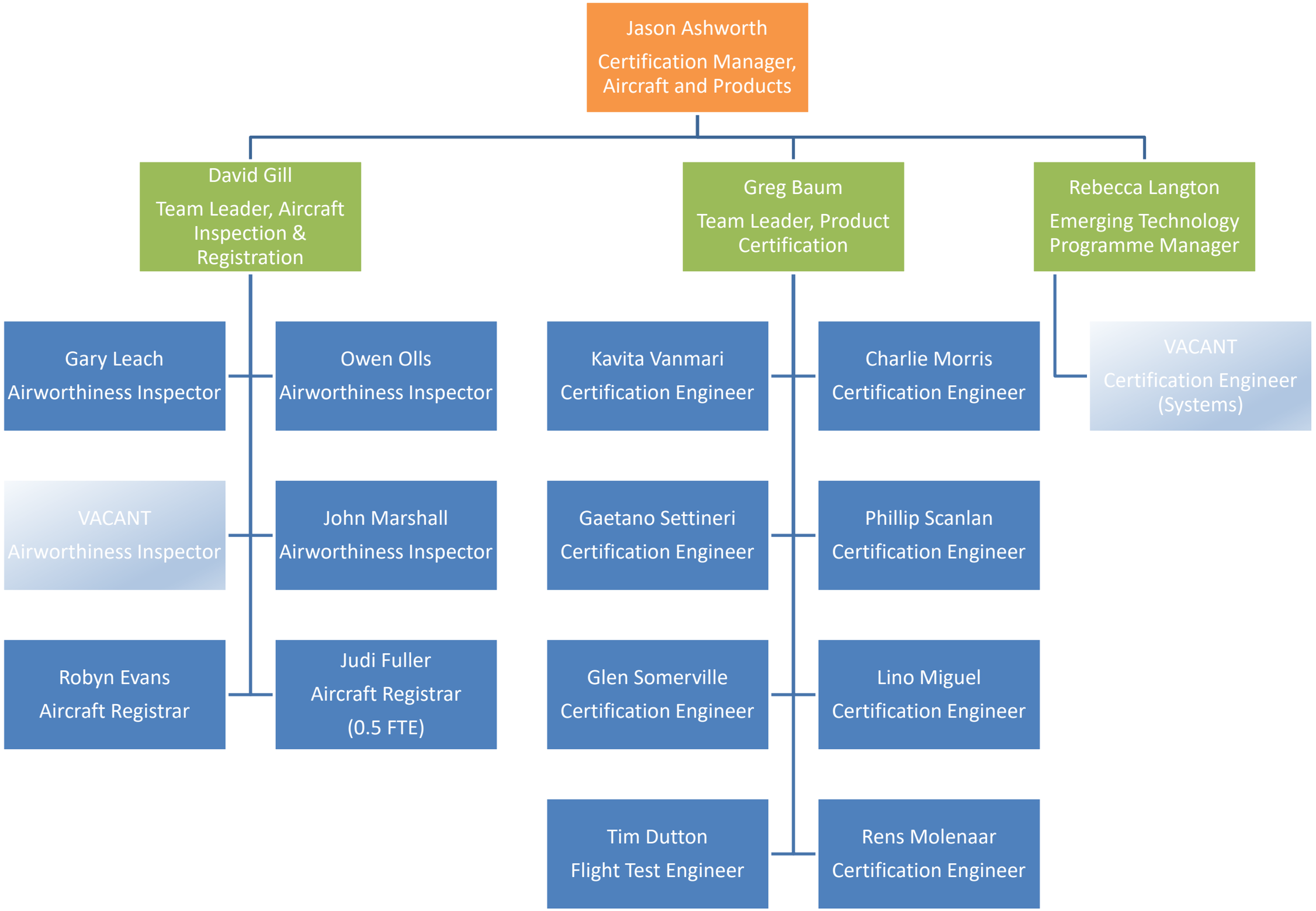
Manager Monitoring and Inspection

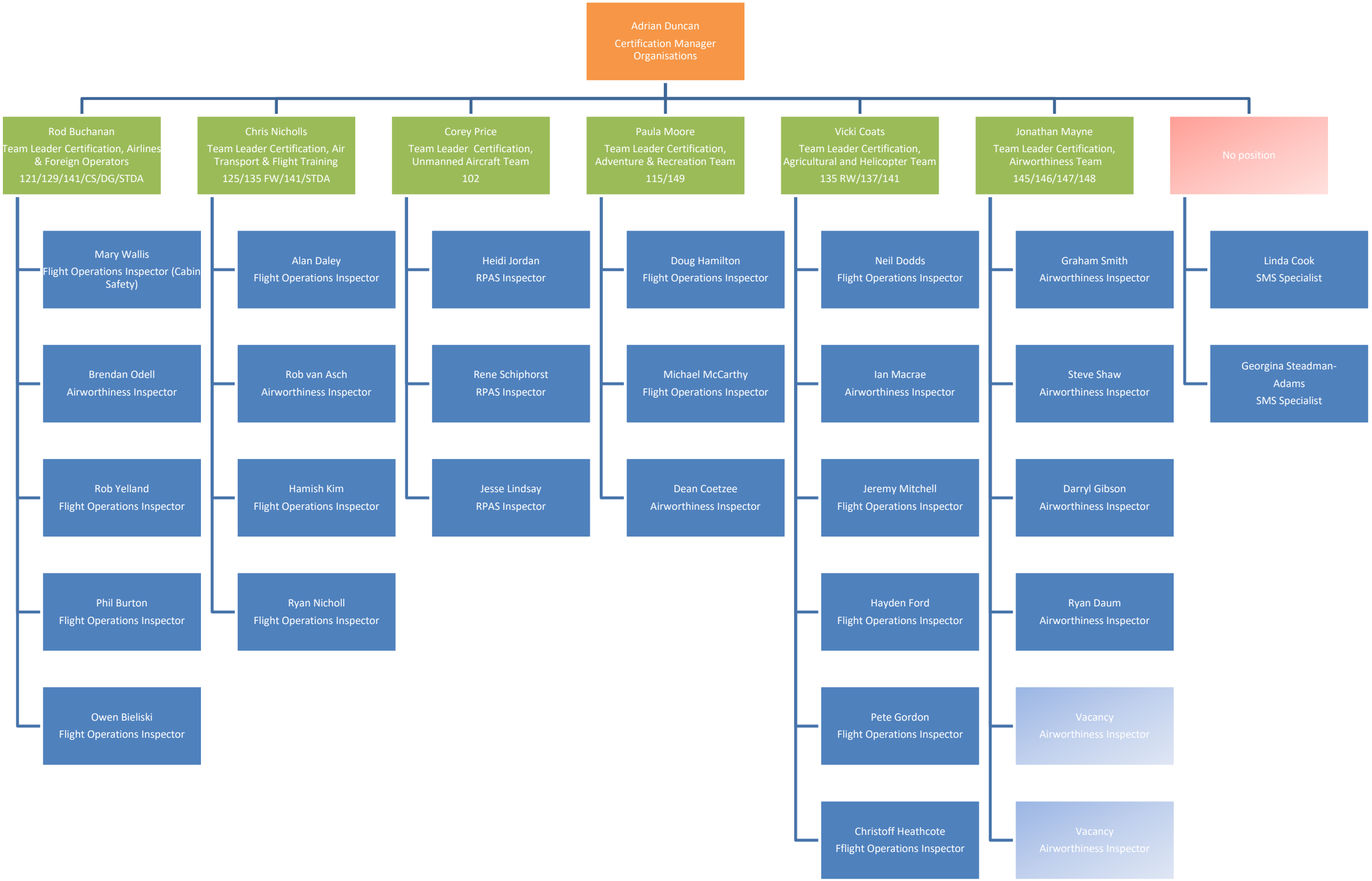
Jason Ashworth

Certification Manager Aircraft and Products

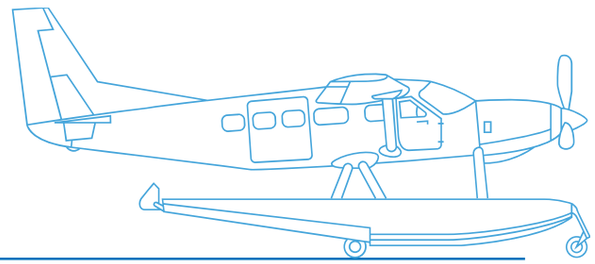
Adrian Duncan

Certification Manager Organisations


Jason Ashworth
Certification Manager, Aircraft and Products
David Gill
Team Leader, Aircraft Inspection & Registration
Greg Baum
Team Leader, Product Certification
Rebecca Langton
Emerging Technology Programme Manager
Gary Leach
Airworthiness Inspector
Owen Olls
Airworthiness Inspector
Kavita Vanmari
Certification Engineer
Charlie Morris
Certification Engineer
VACANT
Certification Engineer (Systems)
VACANT
Airworthiness Inspector
John Marshall
Airworthiness Inspector
Gaetano Settineri
Certification Engineer
Phillip Scanlan
Certification Engineer
Robyn Evans
Aircraft Registrar
Judi Fuller
Aircraft Registrar
(0.5 FTE)
Glen Somerville
Certification Engineer
Lino Miguel
Certification Engineer
Tim Dutton
Flight Test Engineer
Rens Molenaar
Certification Engineer


Adrian Duncan
Certification Manager Organisations
Rod Buchanan
Team Leader Certification, Airlines & Foreign Operators
121/129/141/CS/DG/STDA
Chris Nicholls
Team Leader Certification, Air Transport & Flight Training
125/135 FW/141/STDA
Corey Price
Team Leader Certification, Unmanned Aircraft Team
102
Paula Moore
Team Leader Certification, Adventure & Recreation Team
115/149
Vicki Coats
Team Leader Certification, Agricultural and Helicopter Team
135 RW/137/141
Jonathan Mayne
Team Leader Certification, Airworthiness Team
145/146/147/148
No position
Mary Wallis
Flight Operations Inspector (Cabin Safety)
Brendan Odell
Airworthiness Inspector
Rob Yelland
Flight Operations Inspector
Phil Burton
Flight Operations Inspector
Owen Bieliski
Flight Operations Inspector
Alan Daley
Flight Operations Inspector
Rob van Asch
Airworthiness Inspector
Hamish Kim
Flight Operations Inspector
Ryan Nicholl
Flight Operations Inspector
Heidi Jordan
RPAS Inspector
Rene Schiphorst
RPAS Inspector
Jesse Lindsay
RPAS Inspector
Doug Hamilton
Flight Operations Inspector
Michael McCarthy
Flight Operations Inspector
Dean Coetzee
Airworthiness Inspector
Neil Dodds
Flight Operations Inspector
Ian Macrae
Airworthiness Inspector
Jeremy Mitchell
Flight Operations Inspector
Hayden Ford
Flight Operations Inspector
Pete Gordon
Flight Operations Inspector
Christoff Heathcote
Fflight Operations Inspector
Graham Smith
Airworthiness Inspector
Steve Shaw
Airworthiness Inspector
Darryl Gibson
Airworthiness Inspector
Ryan Daum
Airworthiness Inspector
Vacancy
Airworthiness Inspector
Vacancy
Airworthiness Inspector
Linda Cook
SMS Specialist
Georgina Steadman-Adams
SMS Specialist

How the new structure affects you as a DDH / Part 146 / Part 148



Central application point for certification activities: certification@caa.govt.nz

You may see new names & faces at team leader / management level BUT you will likely interact on activities with familiar people.

E.g. an audit may by managed and led by a different auditor, but you'll likely see a Product Certification Engineer on the audit team

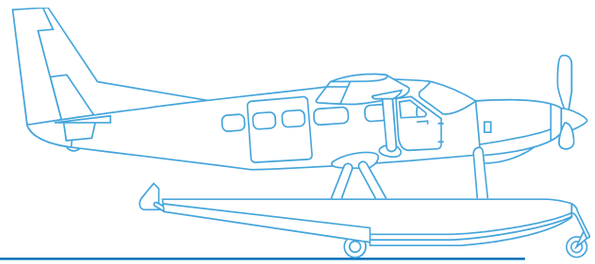
Broadly-speaking the Certification function is grouped into the following :

Aircraft-facing:	Certification Unit, Aircraft & Products	- TCs, STCs, Mods, CofA, CofR
Organisation-facing:	Certification Unit, Organisations	- 146/148 certification, amendment
People-facing:	Licensing and Standards	- Test Pilot Approvals

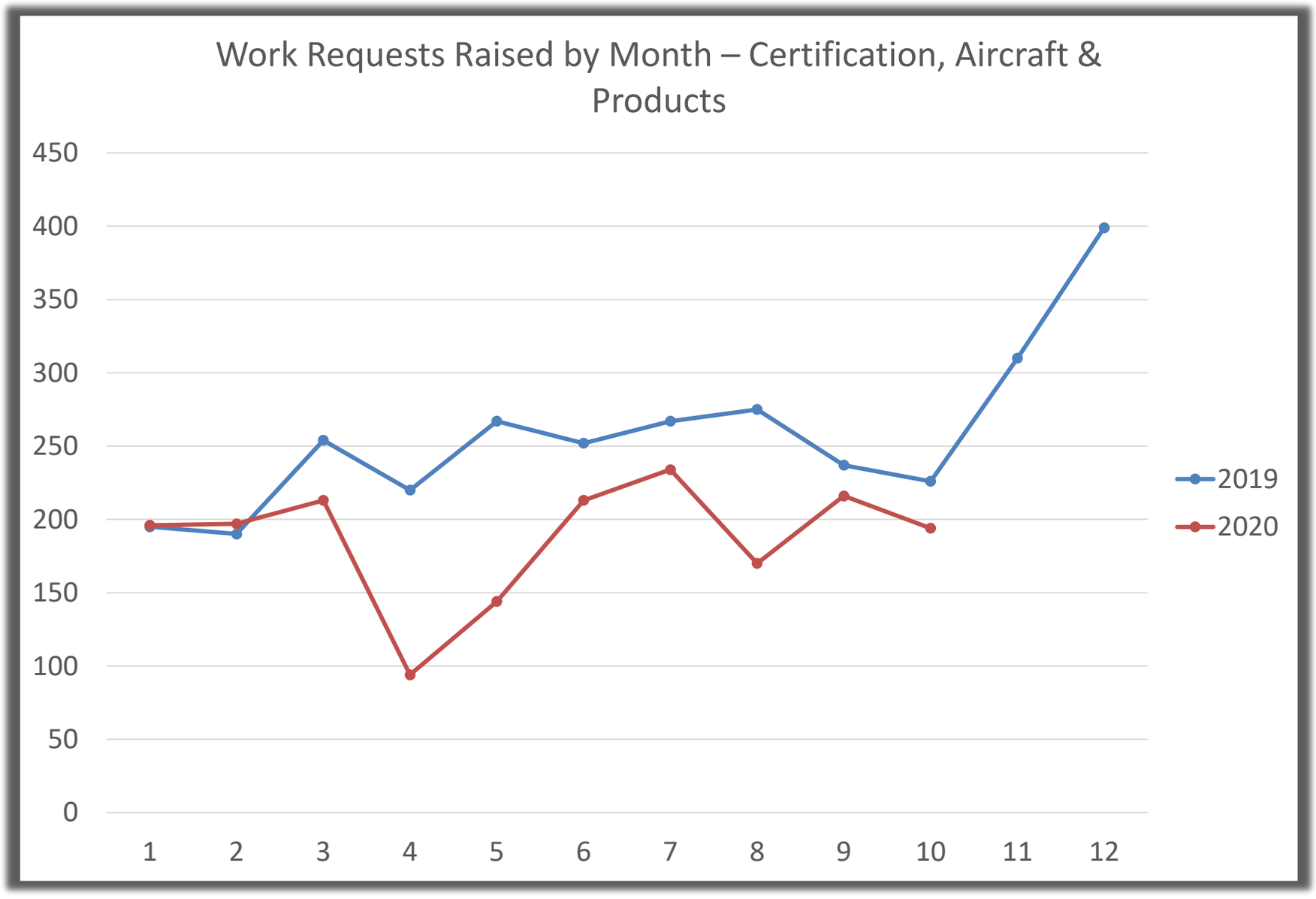
EXCEPT for Design Delegation Holders

Product Certification Team retains overall responsibility for approval of DDHs

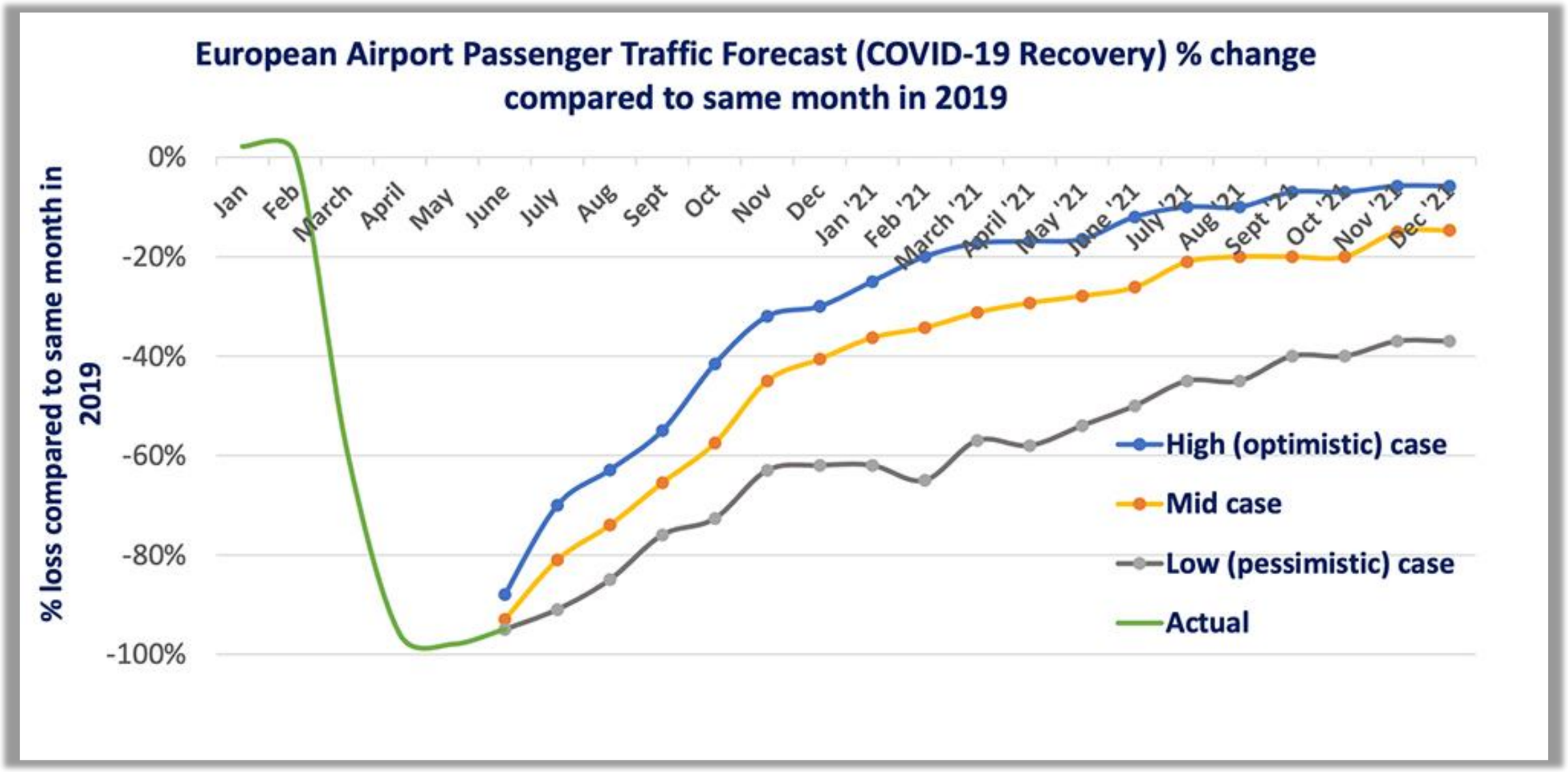
COVID-19 and the impact on us



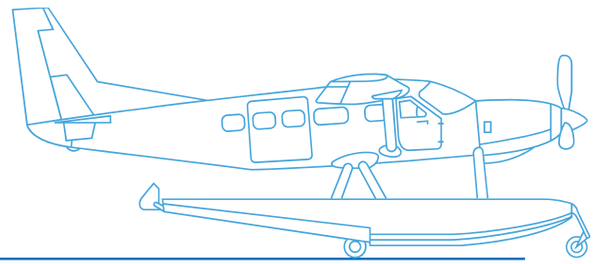
Stats


Work Requests Raised by Month – Certification, Aircraft & Products
450
400
350
300
250
200
150
100
50
0
1
2
3
4
5
6
7
8
9
10
11
12
2019
2020

Stats

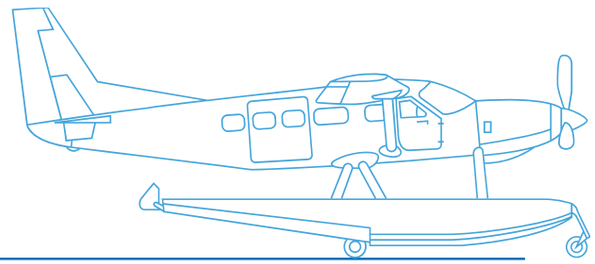

European Airport Passenger Traffic Forecast (COVID-19 Recovery) % change compared to same month in 2019
% loss compared to same month in 2019
0%
-20%
-40%
-60%
-80%
-100%
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec
Jan '21
Feb '21
March '21
April '21
May '21
June '21
July '21
Aug '21
Sept '21
Oct '21
Nov '21
Dec '21
High (optimistic) case
Mid case
Low (pessimistic) case
Actual

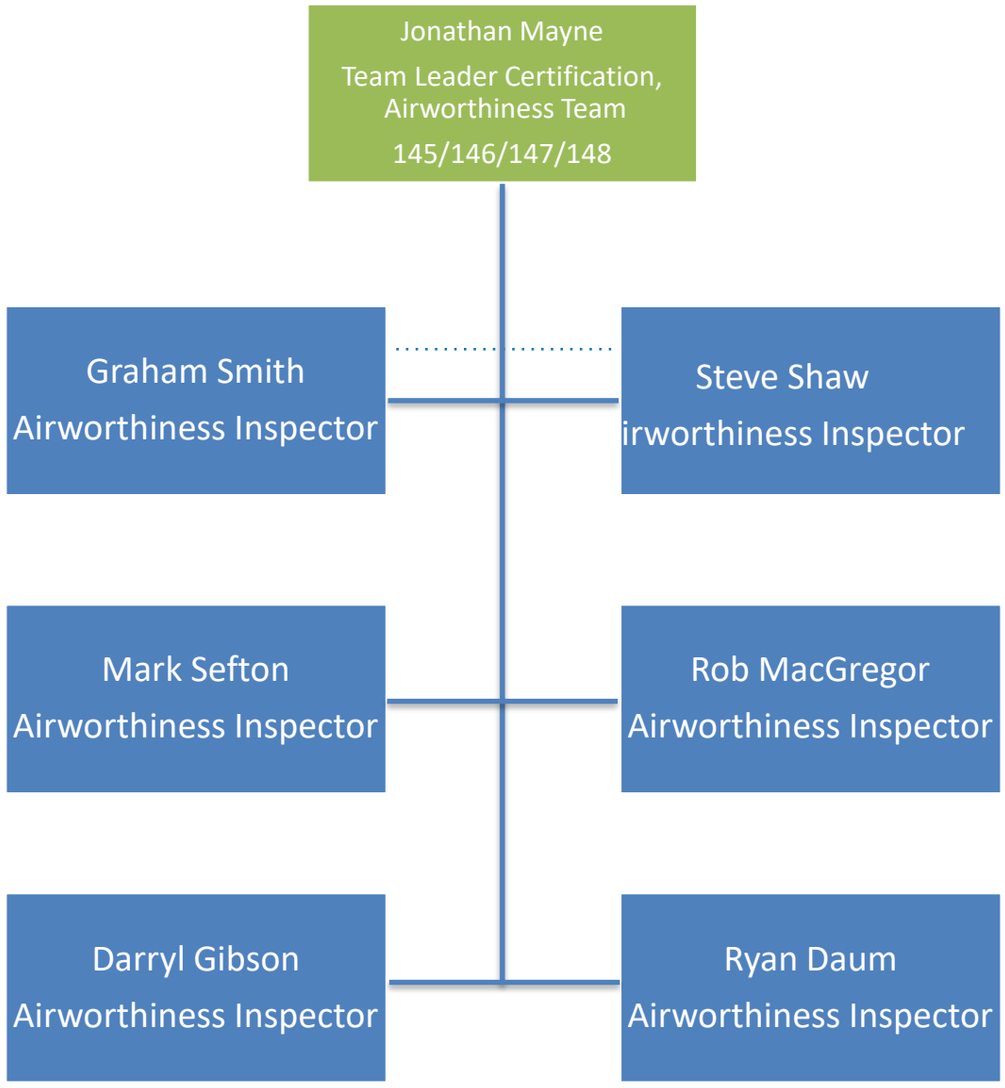
What are the risks to aviation now, and what will they be during recovery?



146/148 Certification

Jon Mayne - Team Leader 145/146/147/148/19F



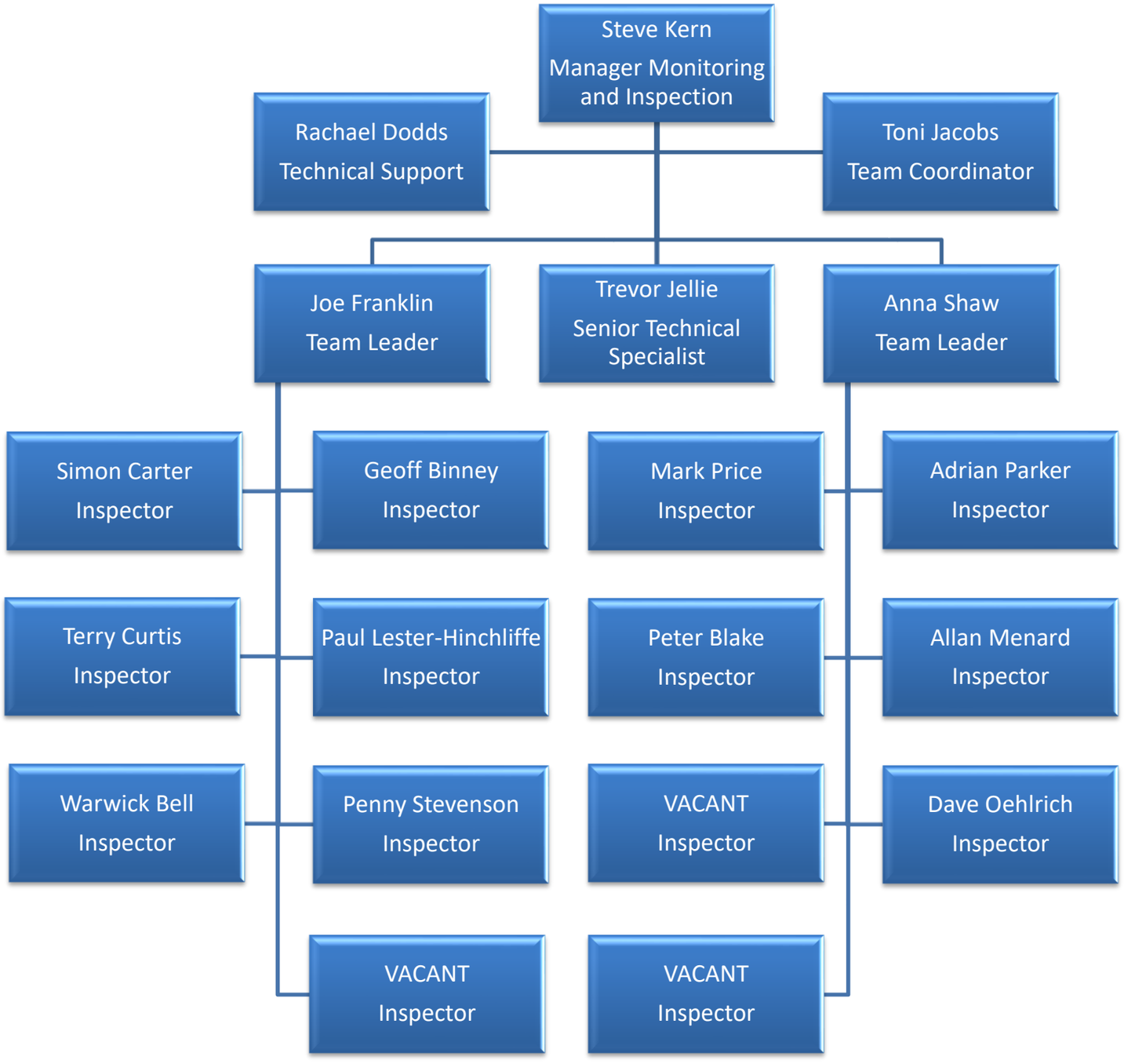

Jonathan Mayne
Team Leader Certification, Airworthiness Team
145/146/147/148
Graham Smith
Airworthiness Inspector
Steve Shaw
irworthiness Inspector
Mark Sefton
Airworthiness Inspector
Rob MacGregor
Airworthiness Inspector
Darryl Gibson
Airworthiness Inspector
Ryan Daum
Airworthiness Inspector

Organisation Certification:

- 12 - Part 146 Design Organisation (7 SMS certified)
- 13 - Part 148 Manufacturing Organisation (8 SMS certified)
- 53 - Part 145 Maintenance Organisations
- 4 - Part 147 Maintenance Training Organisations
- 157 - Part 119 Operators
- 103 - Part 137 Agricultural Operators
- 23 - Part 19F Supply Organisations

Monitoring and Inspection

Steve Kern - Manager Monitoring and Inspection


Steve Kern
Manager Monitoring and Inspection
Rachael Dodds
Technical Support
Toni Jacobs
Team Coordinator
Joe Franklin
Team Leader
Trevor Jellie
Senior Technical Specialist
Anna Shaw
Team Leader
Simon Carter
Inspector
Geoff Binney
Inspector
Mark Price
Inspector
Adrian Parker
Inspector
Terry Curtis
Inspector
Paul Lester-Hinchliffe
Inspector
Peter Blake
Inspector
Allan Menard
Inspector
Warwick Bell
Inspector
Penny Stevenson
Inspector
VACANT
Inspector
Dave Oehlrich
Inspector
VACANT
Inspector
VACANT
Inspector

14

500

700

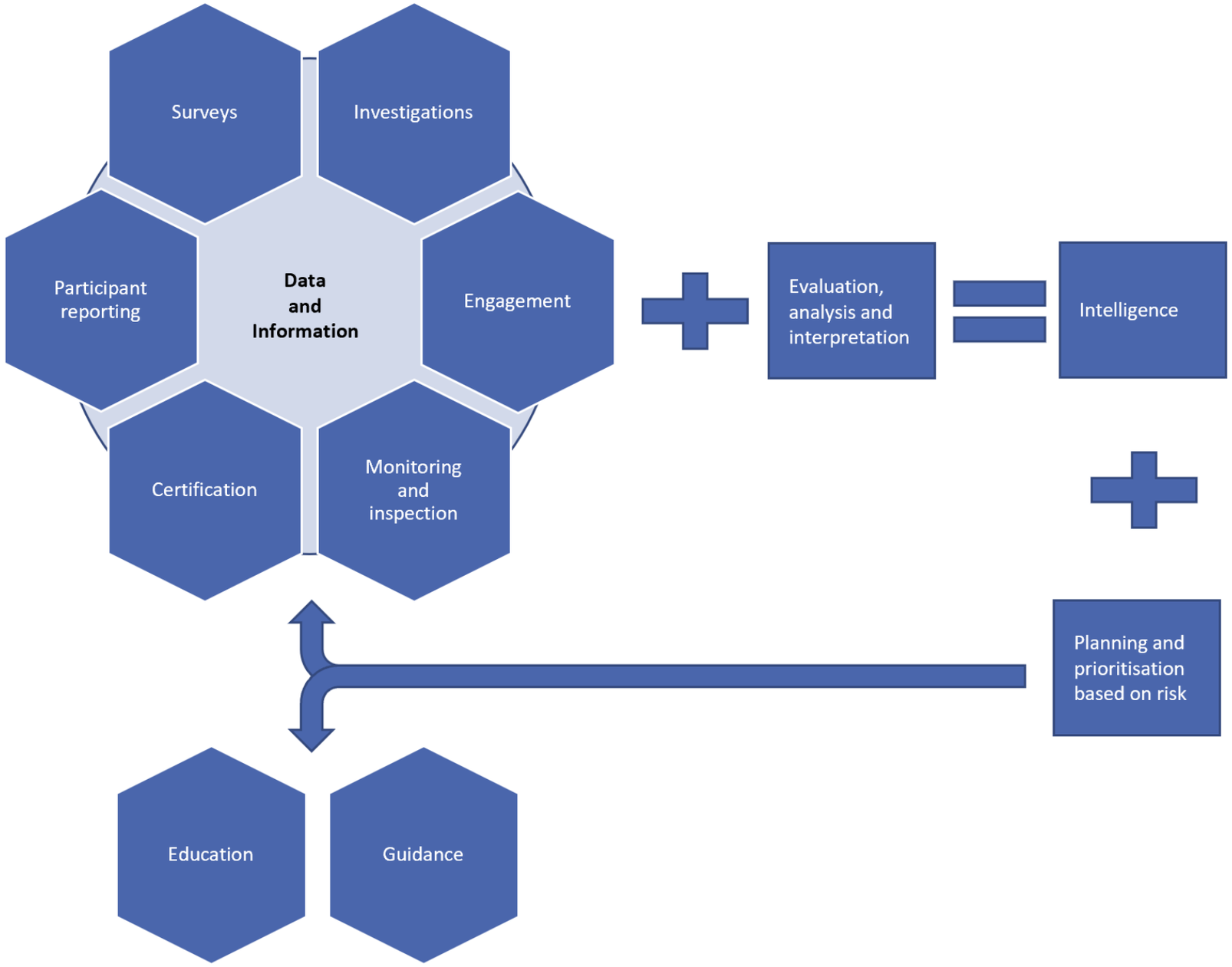
5400

Risk-based, intelligence-led

"Turning the 2024 vision into reality will require focus on being smarter and more effective in everything we do and be willing to transform how we work in a risk-based, intelligence-led organisation."

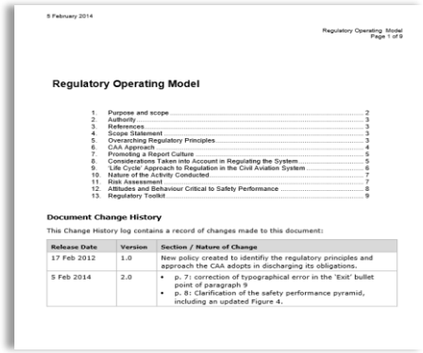
(Statement of Intent)

Risk-based, intelligence-led



Priorities

Regulatory Operating Model



5 February 2014

Regulatory Operating Model
Page 1 of 9

Regulatory Operating Model

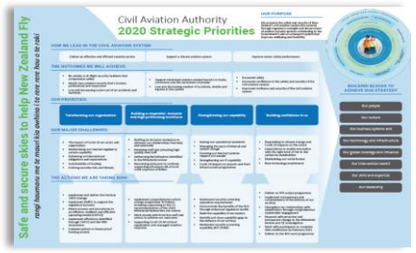
1. Purpose and scope 2
2. Authority 3
3. References 3
4. Scope Statement 3
5. Overarching Regulatory Principles 3
6. CAA Approach 4
7. Promoting a Report Culture 5
8. Considerations Taken into Account in Regulating the System 5
9. 'Life Cycle' Approach to Regulation in the Civil Aviation System 6
10. Nature of the Activity Conducted 7
11. Risk Assessment 7
12. Attitudes and Behaviour Critical to Safety Performance 8
13. Regulatory Toolkit 9

Document Change History

This Change History log contains a record of changes made to this document:

Release Date	Version	Section / Nature of Change
17 Feb 2012	1.0	New policy created to identify the regulatory principles and approach the CAA adopts in discharging its obligations.
5 Feb 2014	2.0	• p. 7: correction of typographical error in the 'Exit' bullet point of paragraph 9 • p. 8: Clarification of the safety performance pyramid, including an updated Figure 4.

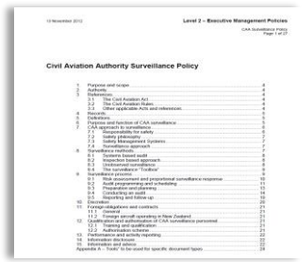
2020 Strategic Priorities



Civil Aviation Authority
2020 Strategic Priorities

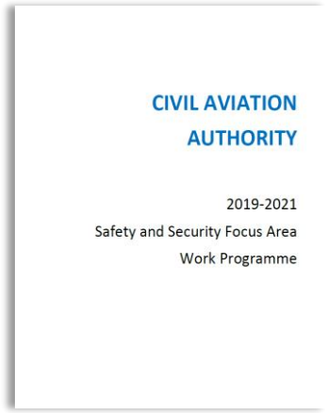
Safe and secure skies to help New Zealand Fly

Surveillance Policy



Civil Aviation Authority Surveillance Policy

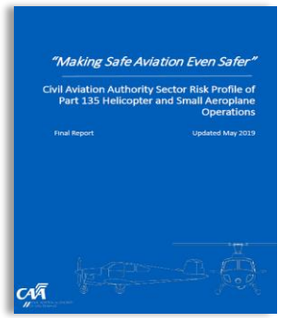
Focus Areas – Work Programmes



CIVIL AVIATION AUTHORITY

2019-2021
Safety and Security Focus Area
Work Programme

Sector Risk Profiles



"Making Safe Aviation Even Safer"

Civil Aviation Authority Sector Risk Profile of Part 135 Helicopter and Small Aeroplane Operations

Final Report — Updated May 2019

International agreements and arrangements

New Zealand has agreements and arrangements in place with other countries and international bodies. These arrangements help us work together to improve the safety and security of the global aviation system.

RSMS

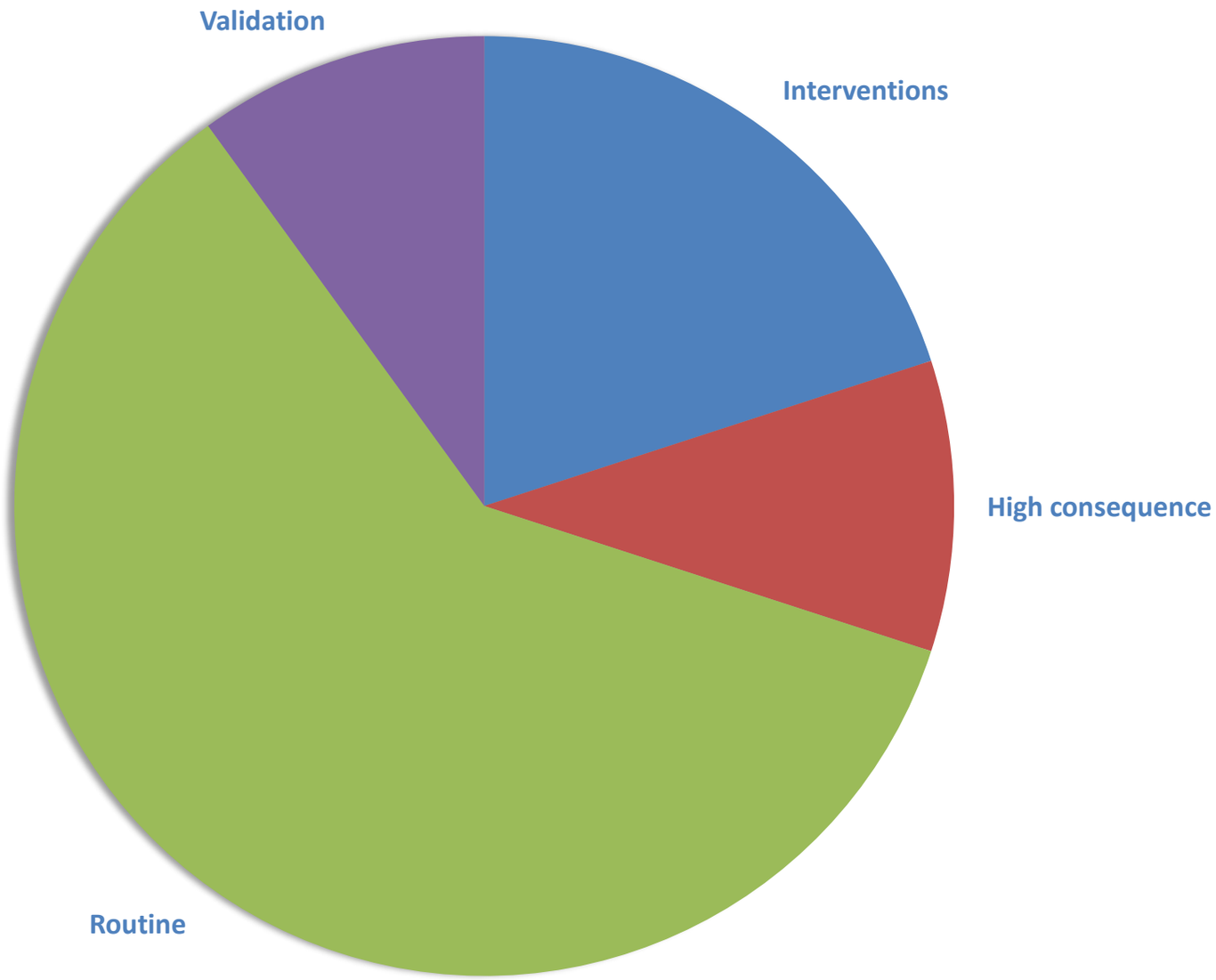
TERMS OF REFERENCE
CAA REGULATORY SAFETY MANAGEMENT SYSTEM (RSMS)

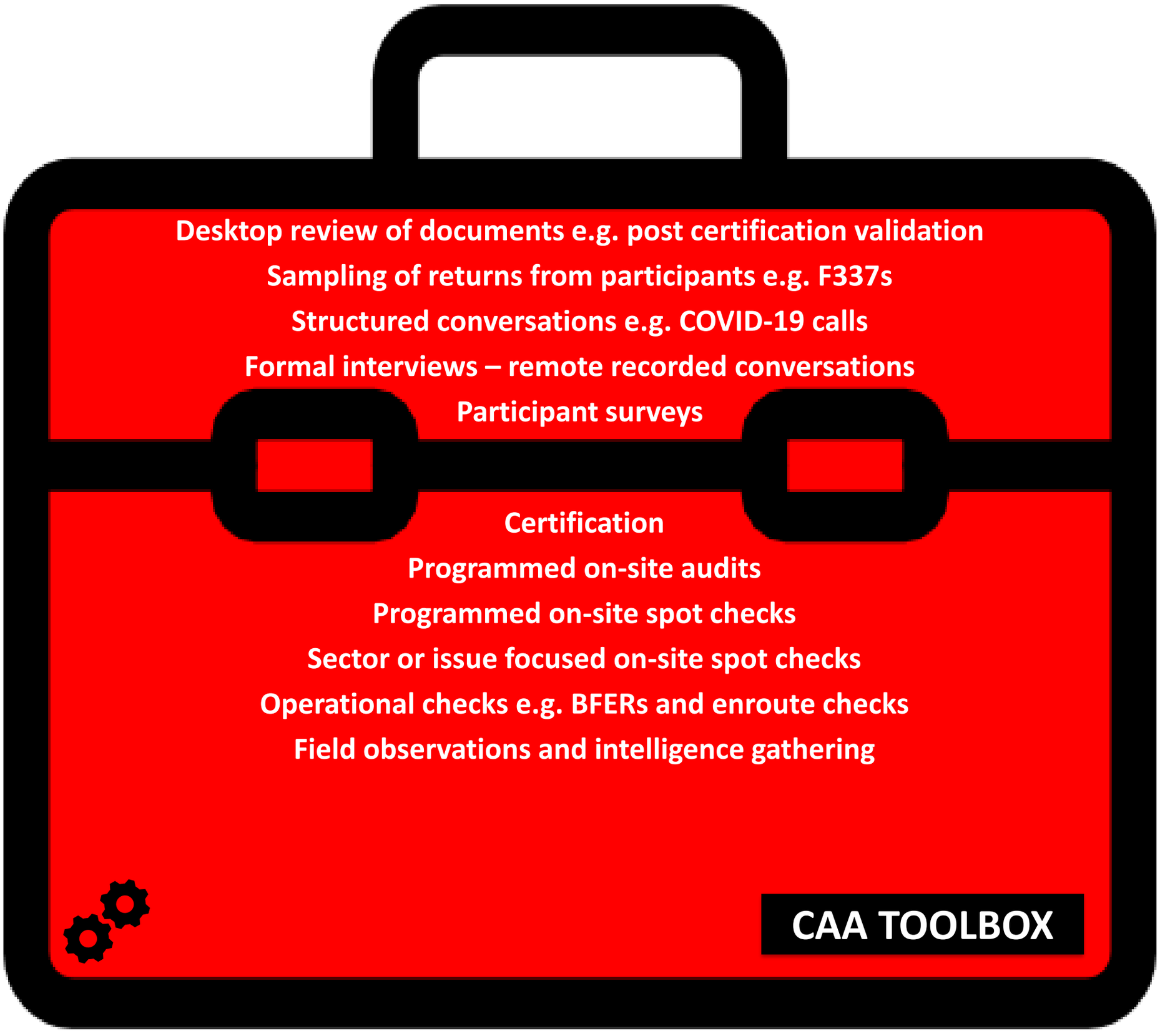
Interventions

Intervention Brief:
Fixed-Wing Flight Training

OCTOBER 15, 2020

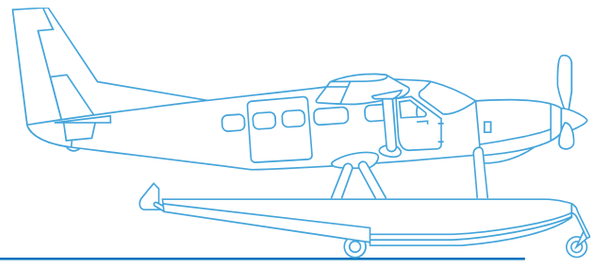
Priorities




Desktop review of documents e.g. post certification validation
Sampling of returns from participants e.g. F337s
Structured conversations e.g. COVID-19 calls
Formal interviews – remote recorded conversations
Participant surveys
Certification
Programmed on-site audits
Programmed on-site spot checks
Sector or issue focused on-site spot checks
Operational checks e.g. BFERs and enroute checks
Field observations and intelligence gathering
CAA TOOLBOX

Review and looking forward

Greg Baum – Team Leader Product Certification



Team Leader Product Certification

Greg Baum

Certification Engineer	Certification Engineer	Certification Engineer	Certification Engineer	Certification Engineer (Av)	Certification Engineer (Av)	Certification Engineer (Av)	Flight Test Engineer
Gaetano Settineri	Kavita Vanmari	Glen Somerville	Lino Miguel	Phillip Scanlan	Rens Molenaar	Charlie Morris	Tim Dutton








Responsibilities

Design Approvals: TC, STC, Mod, TSO, PMA

Design Validation: Acceptance of TC, technical data & specifications

Design Delegation Holders: New, renewal, monitoring

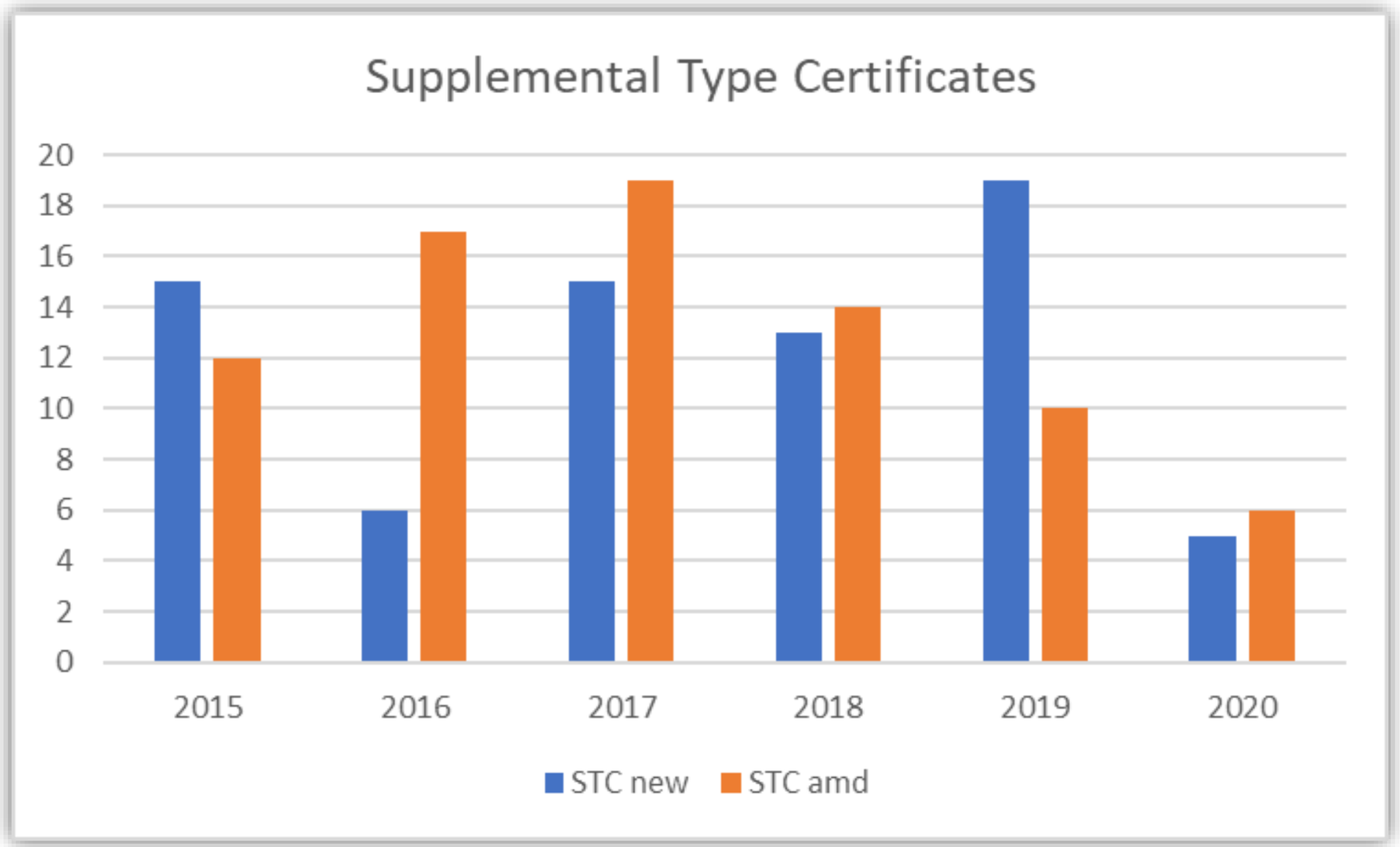
Support to 146/148 certification, monitoring & inspection

Support to 102 initial airworthiness (UAS)

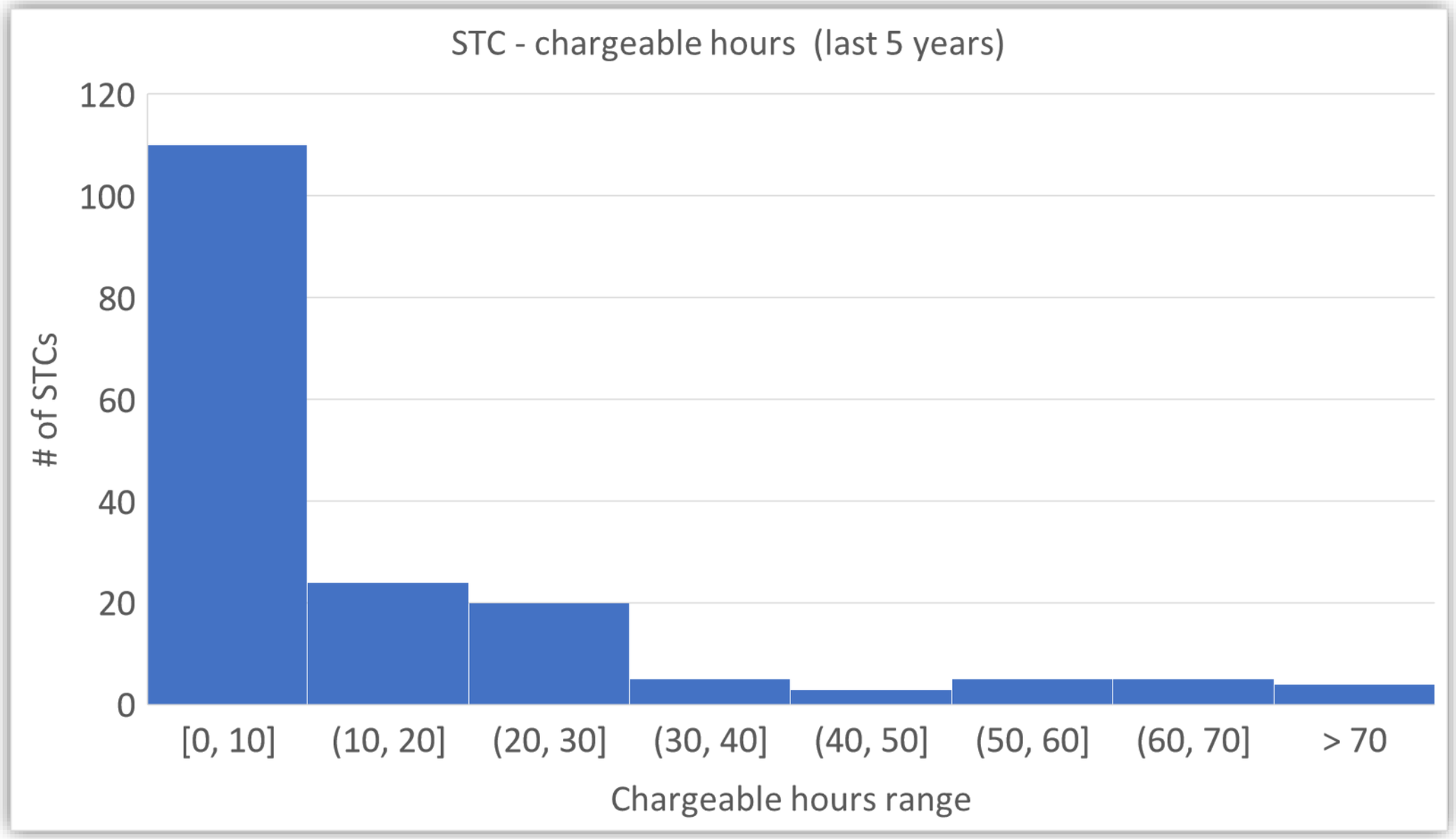
PBN approval for Part 91, input to Part 119 operators

Collaboration: Bilaterals, ASTM, EUROCAE, SAE

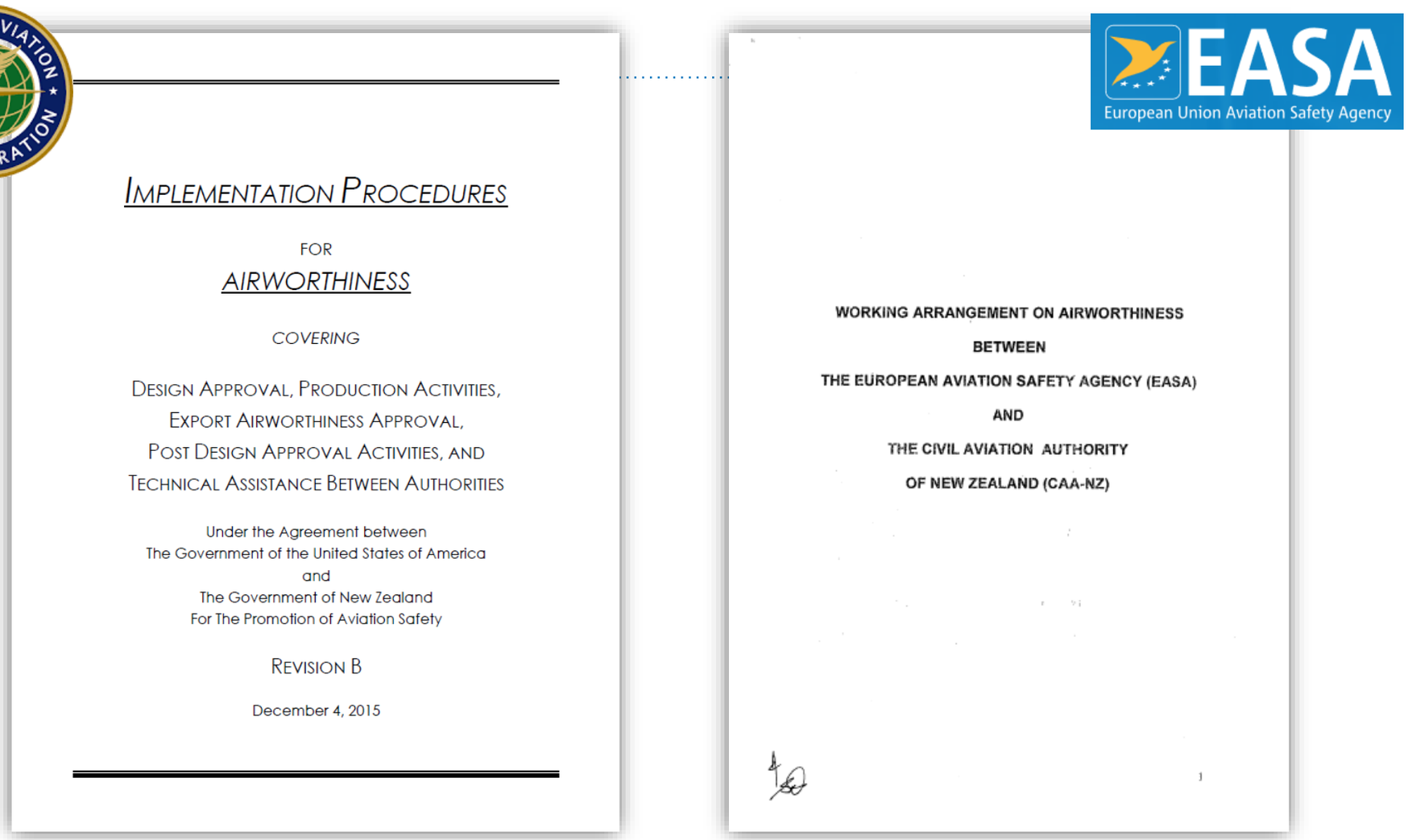
Stats


Supplemental Type Certificates
20
18
16
14
12
10
8
6
4
2
0
2015
2016
2017
2018
2019
2020
STC new
STC amd

Stats


STC - chargeable hours (last 5 years)
120
100
80
60
40
20
0
# of STCs
[0, 10]
(10, 20]
(20, 30]
(30, 40]
(40, 50]
(50, 60]
(60, 70]
> 70
Chargeable hours range

International Engagement



IMPLEMENTATION PROCEDURES

FOR

AIRWORTHINESS

COVERING

DESIGN APPROVAL, PRODUCTION ACTIVITIES,
EXPORT AIRWORTHINESS APPROVAL,
POST DESIGN APPROVAL ACTIVITIES, AND
TECHNICAL ASSISTANCE BETWEEN AUTHORITIES

Under the Agreement between
The Government of the United States of America
and
The Government of New Zealand
For The Promotion of Aviation Safety

REVISION B

December 4, 2015

WORKING ARRANGEMENT ON AIRWORTHINESS

BETWEEN

THE EUROPEAN AVIATION SAFETY AGENCY (EASA)

AND

THE CIVIL AVIATION AUTHORITY

OF NEW ZEALAND (CAA-NZ)

Part 23

14 CFR 23 amendment 64 / CS-23 amendment 5

- FAA & EASA means of compliance are different
- Must use FAA/EASA means of compliance – identify Part 23 paragraph and MoC on PSCP/Compliance matrix/Technical Assessment
- ASTM membership expected
- Alternate means of compliance may be acceptable to Director (CAA Issue Paper)
- Differences: low speed handling characteristics (loss of control) and icing
- Similarity – amendment comparison may not hold true

Cyber security

Aircraft Systems Information Security Protection (ASISP)

FAA Policy Statement PS-AIR-21.16-02 r2

TC/STC Special Conditions for….

Systems with Major, Hazardous, Catastrophic failure conditions:

- 14 CFR 23 Level 4 Commuter Category
- 14 CFR 25 Transport Category

Systems with Hazardous, Catastrophic:

- 14 CFR 27 Multi-engine Normal Category
- 14 CFR 29 Transport Category

e.g. Garmin G5000 STC on Beech 400A

Aircraft Cybersecurity

EASA Decision 2020/006/R

Rule change (interim TC/STC Special Conditions) for….

System failure criticality not specified:

CS-23 Level 4

CS-25

CS-27 Category A

CS-29

CS-E & CS-APU engine control systems

CS-ETSO, CS-P Propeller control systems

MoC: RTCA DO-365, EUROCAE ED-204

Note: ASTM F44 committee: Draft Standard Practice for Protection of Aircraft Systems from Intentional Unauthorized Electronic Interactions (IUEI) applies to Part 23 Level 1-4 Standard Category, Haz/Cat)

CPD

"We owe it to our passengers to keep learning how to do it better"

Chesley Sullenberger

- KU – online courses (Aircraft Structures, Icing, flight dynamics, EWIS, flight control & hydraulics, System Safety).
- Flight Safety – Human Factors, Gen Fam e.g. PT6, MEL, SMS.
- RTCA – DO-160, 178, 254
- SAE – Design for Manf, Design of Experiments, FEA, AS9100
- FAA – DER recurrency training
- ASTM – meetings on F44
- RAeS CPD sessions

CPD

Industry seminars	Date	Notes
AEA South Pacific conference (Qt)	10-11 Nov 2020	Postponed to 2021
UAS certification working group	Bi-annual	Likely online
ASTM F44 committee meeting	April/Oct	Likely free and online
ASTM F37 committee meeting		Likely free and online
JARUS Plenaries/WG6 meetings		Likely free and online
Fire & cabin safety triennial	Next event 2022	
FAA APAC bilateral partners meeting	Postponed to late 2021	
FAA Rotorcraft safety seminar	27-Oct-20	Online, free
EASA additive manufacturing	tbc	Online, free?
EASA rotorcraft symposium	Nov-20	Online, free.
FAA UAS symposium		
Drone enable (ICAO)	Mar-21	Live free on youtube
Uber elevate	June 21 tbc?	

Looking forward

- AC21-X Flight Test Guidance (imminent release)
- AC00-6 **Electronic signatures/recordkeeping/manuals** (released)
- AC21-7 Type Certification (wip)
- AC21-8 **Supplemental Type Certificates** (wip): Update PSCP template for Finding of Compliance.
- AC146-1 **Aircraft design organisations** (wip): Develop a clearer scope definition for Part 146 and DDH to ensure consistency and global alignment. Clarify delegation issue process. Clarify standalone FMS approvals. Remove ‘negligible’ W&B definition.
- AC43-14 Standard Design Changes (wip): Appendices for LED lights, AoA sensors, CO sensors, real time tracking systems e.g. Spidertracks.
- AC91-13 Night Vision Systems (wip): Clearer split between Ops & Airworthiness requirements. Clarity on Major/Minor for amendments to existing NVIS.

Hot topics

Continuing Airworthiness

- 1153 defect occurrences registered Oct 19 – Sept 20
- Nil registered by Part 146 or Part 148
- 32 related to NZ TC (raised by Maint Orgs, 1 by TC holder)
- One with keyword “STC” (raised by Maint Org with a DO)
- One with keyword “modification” and related to DO approval (raised by Maint Org)

12.55 - Notification of incident

(a) A holder of a certificate issued by the Director under the Act and the following Parts must notify the Authority as soon as practicable of any associated incident if the certificate holder is involved in the incident and the incident is a serious incident or is an immediate hazard to the safety of an aircraft operation:

(1) Parts 115, 119, 129 and 137— aircraft incident, or dangerous goods incident:

(2) Part 172 — airspace incident:

(3) Parts 171 and 174 — facility malfunction incident:

(4) Parts 19, 47, 115, 119, 129, 137, 145, 146, and 148 — defect incident:

Human Factors in Design

Clarity of Maintenance Instructions

× “Installation is the reverse of removal”

× “Make new hose in accordance with AC43.13-1b”

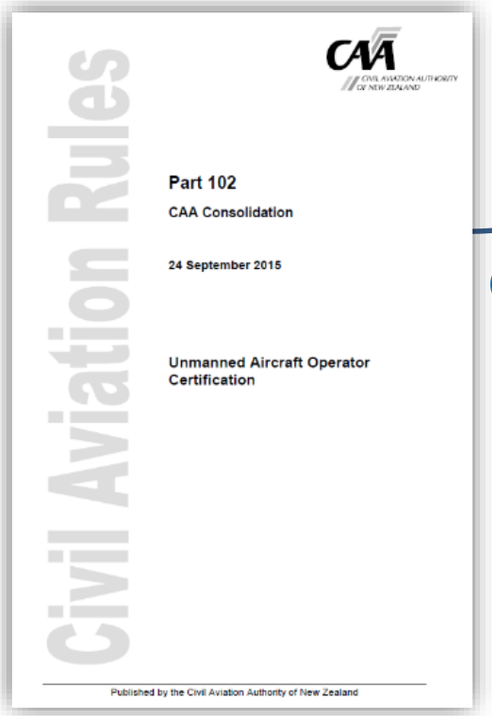
Different instructions for similar items – TC v’s STC/Mod

✓ Include IPC supplement if confusion could occur

✓ Consider the affect on or need for MMEL

The FAA provides a variety of material relating to human factors to help designers here:
https://www.faa.gov/aircraft/air_cert/design_approvals/human_factors/hf-air/policy/
Design Considerations for the Human Contribution to Safety was presented at the 2019 Design Delegate Holders Seminar: https://www.aviation.govt.nz/assets/aircraft/2019-design-delegation-seminar/design-considerations.pdf

UAS approach

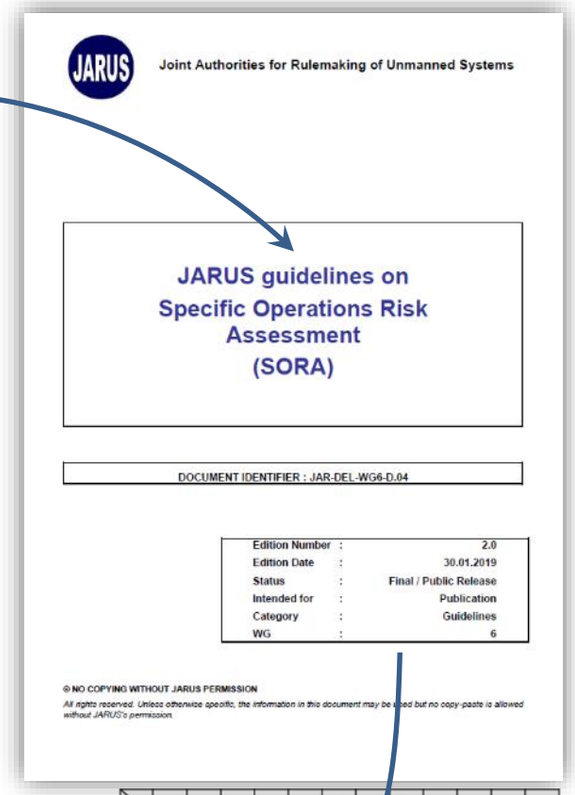


Complexity

Any single entry in the Complex Operation column cause the operation to be defined as Complex.

	Simple Operation		Complex Operation	
Weight of UA	Zero to 25kg	☐	Greater than 25kg	☐
Over People or Property	• With consent; or • with attempted consent (notified)	☐	• Without consent; or • over crowds	☐
Detect and Avoid	• VLOS; or • EVLOS	☐	BVLOS	☐
Level of Autonomy	The remote pilot has the ability to control or influence the flight path of the UA	☐	The remote pilot does not have the ability to control or influence the flight path of the UA	☐
Proximity to Air Traffic (altitude)	• Less than 400ft; or • operating within a Danger Area; or • greater than 4km from aerodrome in Class G airspace with an appropriate NOTAM	☐	Greater than 400ft outside of the simple operation definition	☐
Proximity to Air Traffic (aerodromes)	• Greater than 4km from aerodrome; or • less than 4km from aerodrome and shielded; or less than 4km from aerodrome with agreement/ATC authorisation and 101/61/149 qualification; or • less than 4km from aerodrome with radio and visual watch	☐	Less than 4km from aerodrome outside of the simple operation definition	☐
Meteorological Minima	• Day VMC; or • Night VMC shielded	☐	• Night VMC un-shielded; or • Day/Night operations in IMC/BVLOS	☐
Role	Operations minimising hazards to persons, property and other aircraft.	☐	Carriage of dangerous goods; or passenger carrying	☐

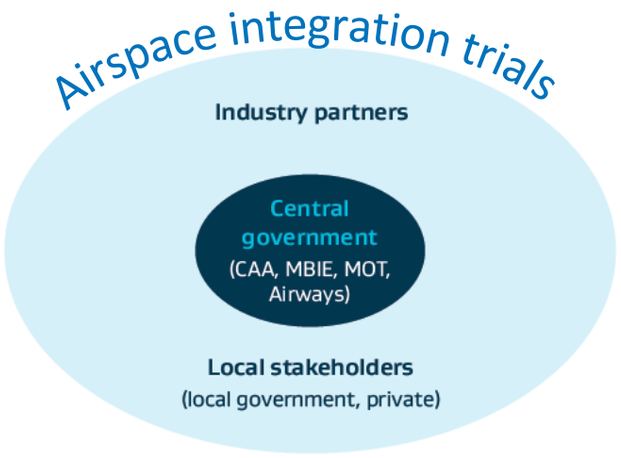
Risk



Certification

Level of Assurance (oversight) = declare/3rd party/TC

Level of Integrity (requirements) = OSO mapping. Standards: D&R, Industry Consensus, 14CFR, CS/SC-VTOL. No Integration solutions yet (Pt91 requirements – DAA, AI, ATS comms etc.)



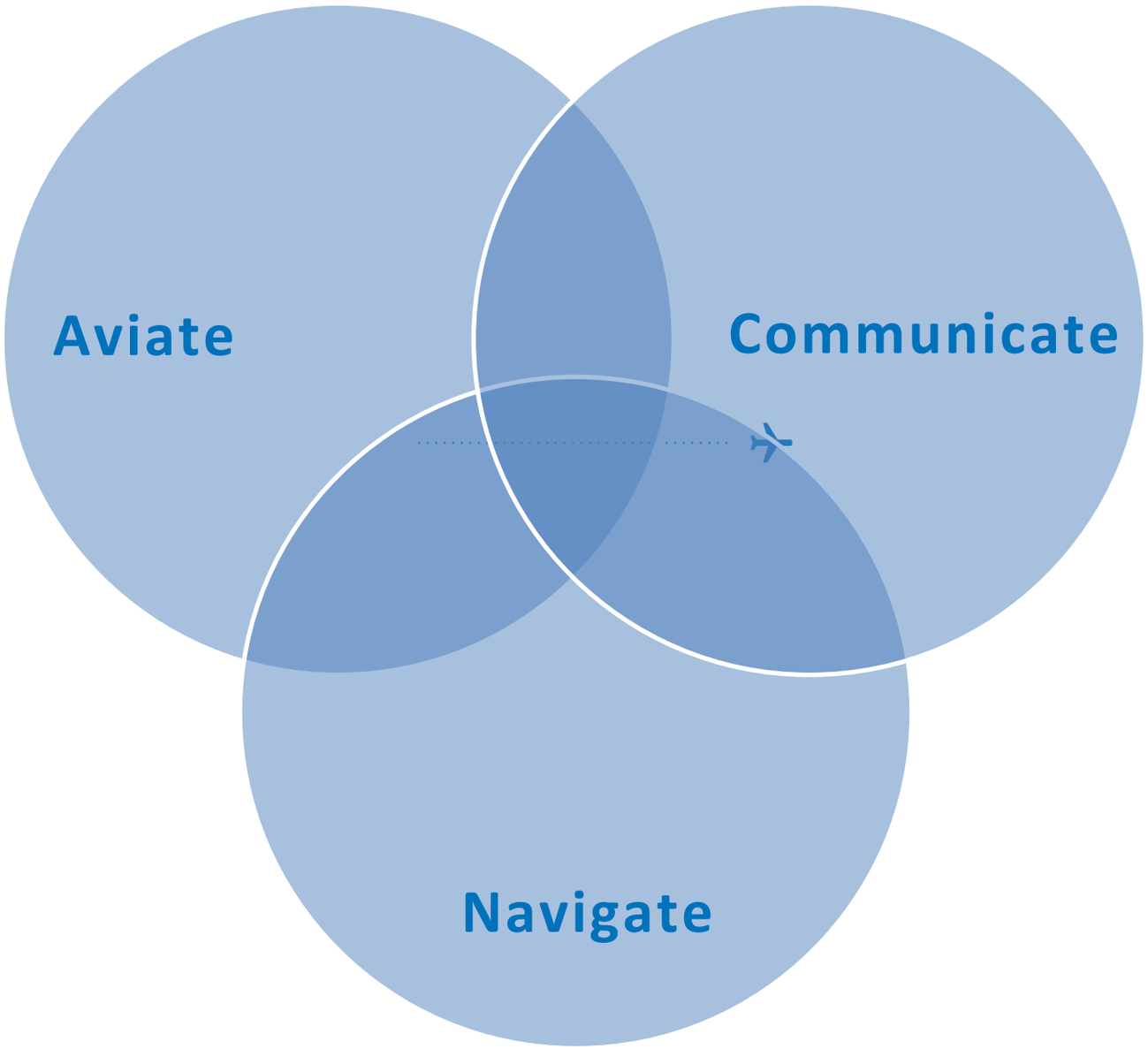
ASTM INTERNATIONAL

RTCA

EUROCAE

Size	Applications in progress
0 – 25kg BVLOS	1 (medical delivery)
25 – 600kg	6 (infrastructure, survey, HALO, agriculture – all remote areas)
>600kg conversion	2 potential (both 14CFR 23 - STCs)
>600kg other	1

UAS approach



Flight control System (autonomy level)

Detect & avoid (Traffic, Weather, Terrain, Birds, People, Structures, wake turbulence)

Emergency procedures (Fault mitigation, safe landing sites)

ATC

Other traffic

Flight Information Services

Remote Pilot C2

Frequency management

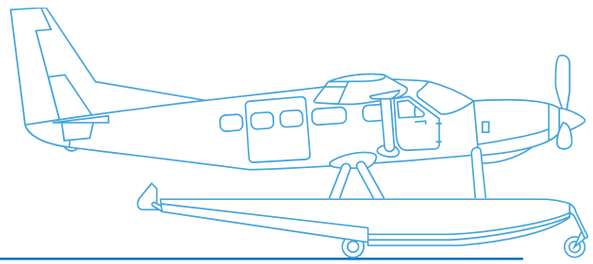
Route management

Congestion (hold)

Alternates

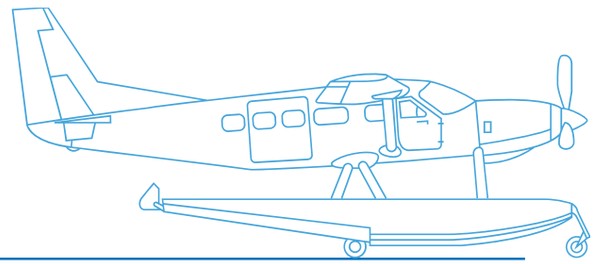
SBS/GBNA outages

Break



DDH Q&A

We invite any questions, comments and/or feedback



Thank for you your attendance