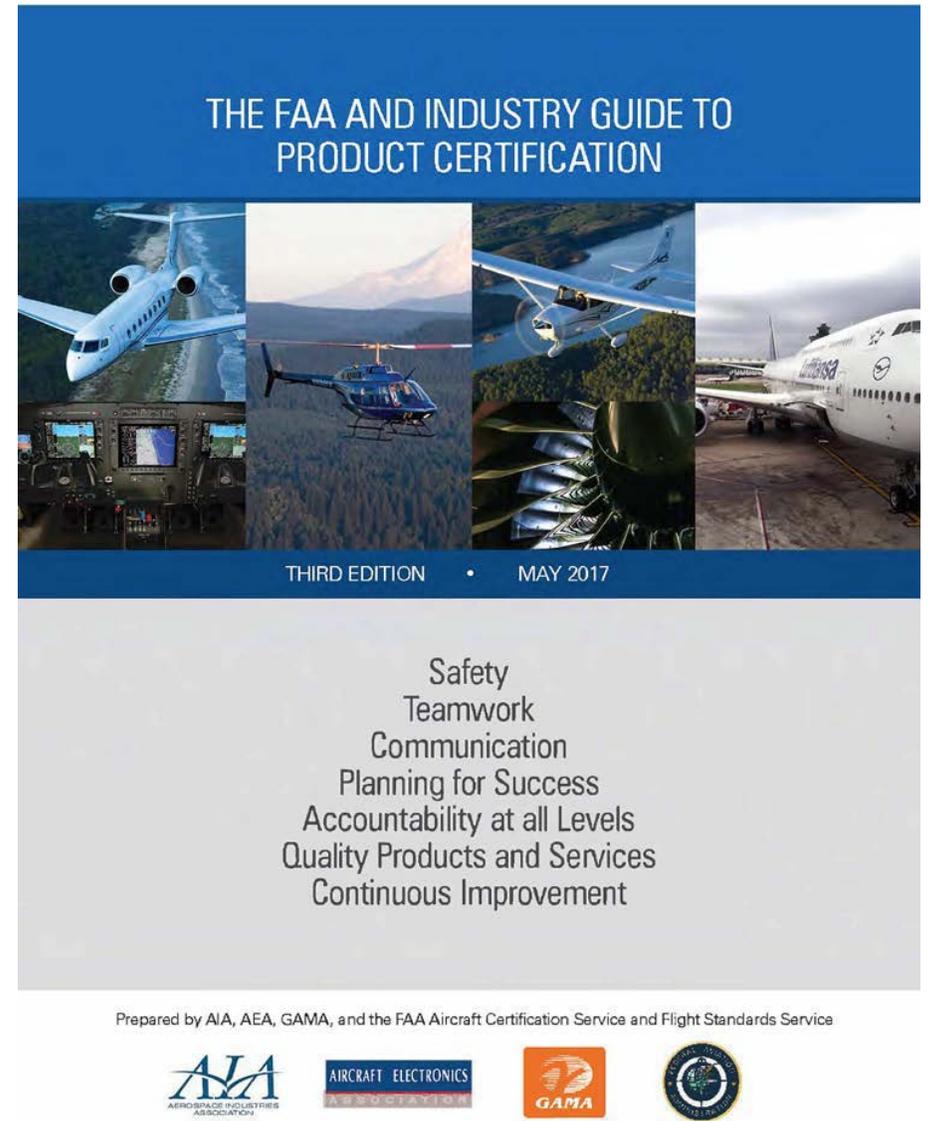


Certification Process Guide Workshop

Hosted by the Wichita
Aircraft Certification Office
February 12, 2020

Co-presented by the FAA and Industry
Certification Product Guide Implementation Team





Poll Everywhere

Please send a text to 22333 and enter
FAACPG734 (no spaces)
once to join

Your responses are anonymous

Your handouts include the questions that we will be asking for your input on.

Please review the questions in advance



What is the first word that comes to mind when you think about FAA Aircraft/Engine Certification?

Total Results: 0



Poll Everywhere

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Our Hurdles to Success:

Stretched
Resources...

Frustration...

Delays...

And on...

And on...

And on...

And on...

Cert Plans incomplete

Rationale for FAA retention unclear

Applicant schedule not realistic

FAA requirements change when personnel change



Welcome to the CPG Workshop

Today's Agenda

- Introductions
- Workshop Goals
- Why the CPG is critical to our collective success
- CPG principles and tools
- Questions

Introductions



- Lance Gant, Director, Compliance and Airworthiness Division
- Kevin Dickert, Manager, Boston ACO
- Christina Underwood, Manager, Atlanta ACO
- Ric Peri, AEA, Vice President of Government and Industry Affairs
- Walter Desrosier, GAMA, Vice President of Engineering and Maintenance
- David Silver, AIA, Vice President of Civil Aviation
- Mazdak Hobbi, Manager of Farmingdale and Saddle Brook MIDO (SO)
- Scott Geddie, Manager, Delegation and Organizational Procedures Branch
- Darby Mirocha, Program Manager, Atlanta ACO, Change Management Practitioner
- Heather Thorson, Senior Change Management Advisor, AIR-700

Building Emergencies

Tornado shelter

- Stairs to basement located in north vestibule
- Remain with meeting POC for further instructions

Building evacuation

- Proceed to nearest safe exit, then to primary muster area
- Remain with meeting POC for further instructions



Introductions



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How would you define "Success" in a Certification Process?

Start the presentation to see live content. Still no live content? Install the app or get help at PollEv.com/app

Goals of the CPG workshop



- Increase **understanding of CPG principles** and their benefits
- **Practical applications of CPG principles**
- Increase **commitment to use CPG principles**
- Obtain **Feedback on the workshop**

CPG Evolution: History and purpose of the guide

History

- **Certification Process Improvement (CPI) Guide (1999)**
 - “The FAA and Industry Guide to Product Certification” released January 1999
 - “The FAA and Industry Guide to Avionics Approvals” released April 2001
- **Second Edition “The FAA and Industry Guide to Product Certification” (2004)**
 - Incorporates “The FAA and Industry Guide to Avionics Approvals”
- **Third Edition “The FAA and Industry Guide to Product Certification” (2017)**



Purpose of the CPG

Philosophy and tools to foster open communication and alignment regarding roles and responsibility. This leads to increased predictability.

What's new in the 3rd generation of the CPG?

- Shift from Inspirational to Instructional
- Adds emphasis on accountability and expectations
- Adds emphasis on systems oversight approach
- Reflects current delegation systems/organizations
- Emphasis on Project Management Principles
- Updated Guidance on Partnership for Safety Plans





CPG supports our Joint Interest

The design and approval of safe and compliant product in a timely manner

BENEFITS

- ✓ *safety enhancements through new technology and design innovation can be more rapidly integrated into aviation products*
- ✓ *Reduced time and cost of product certification*
- ✓ *Increased capacity for other certification-related work*
- ✓ *Increased predictability in schedule*



BENEFITS

FAA

- Reduced involvement in the routine
- Increased capacity to focus on the new and novel (safety risk)

APPLICANT

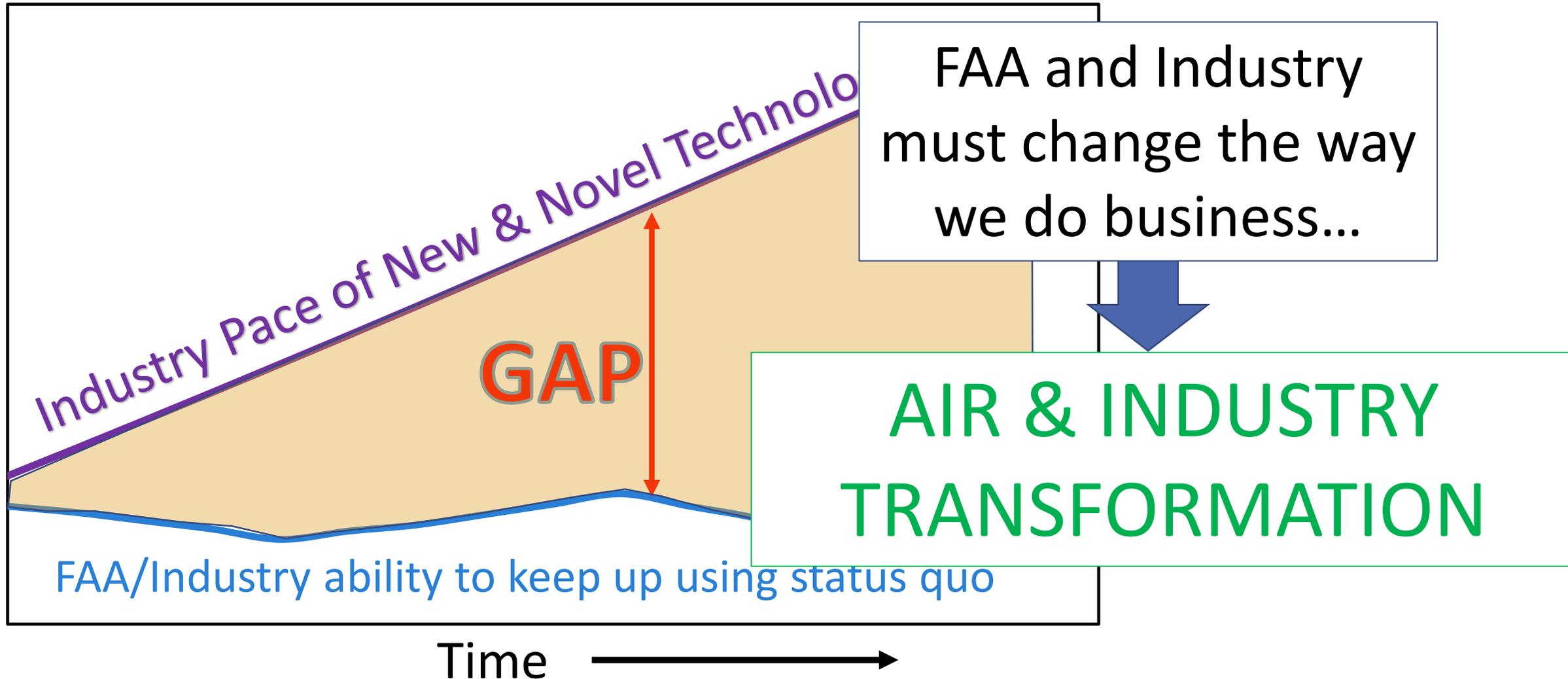
- More efficient certification
- Faster time to market
- Increased capacity for certification

FOR ALL

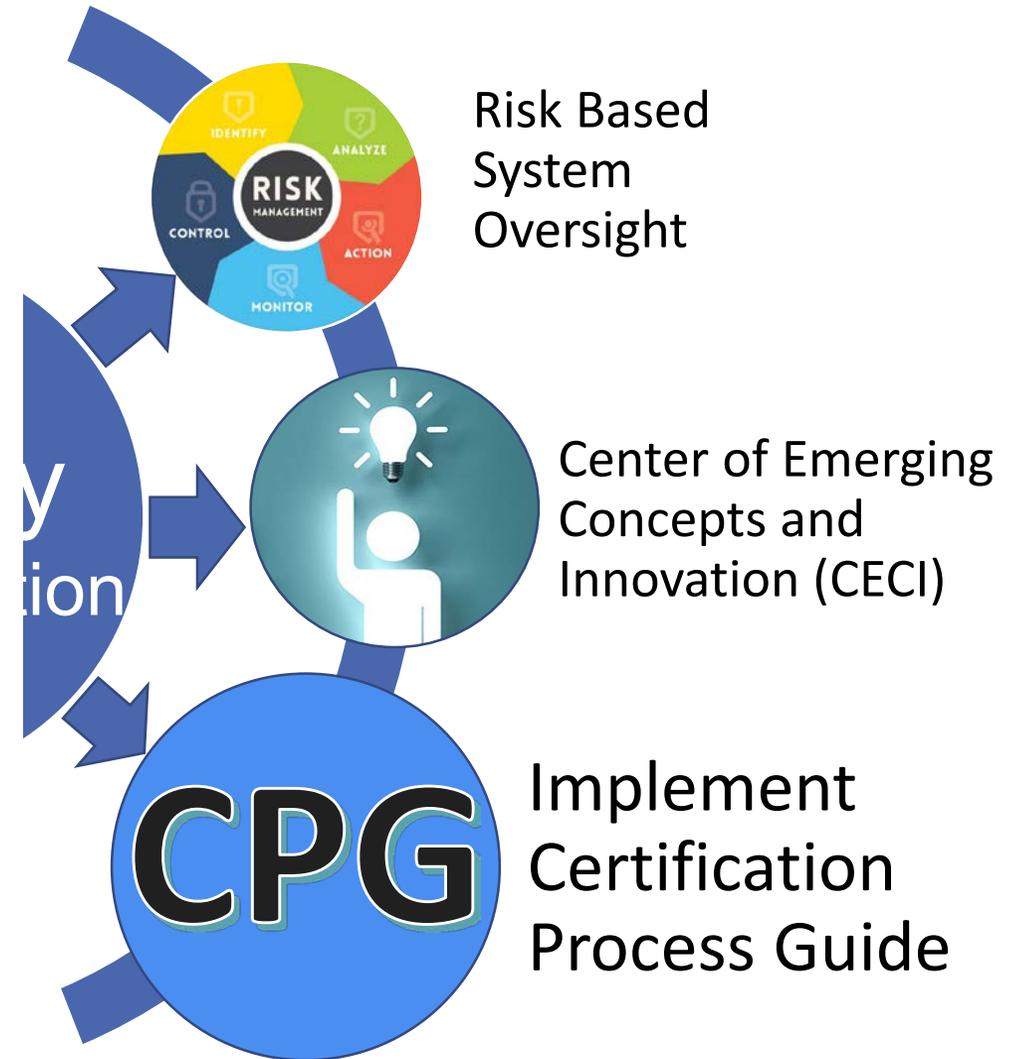
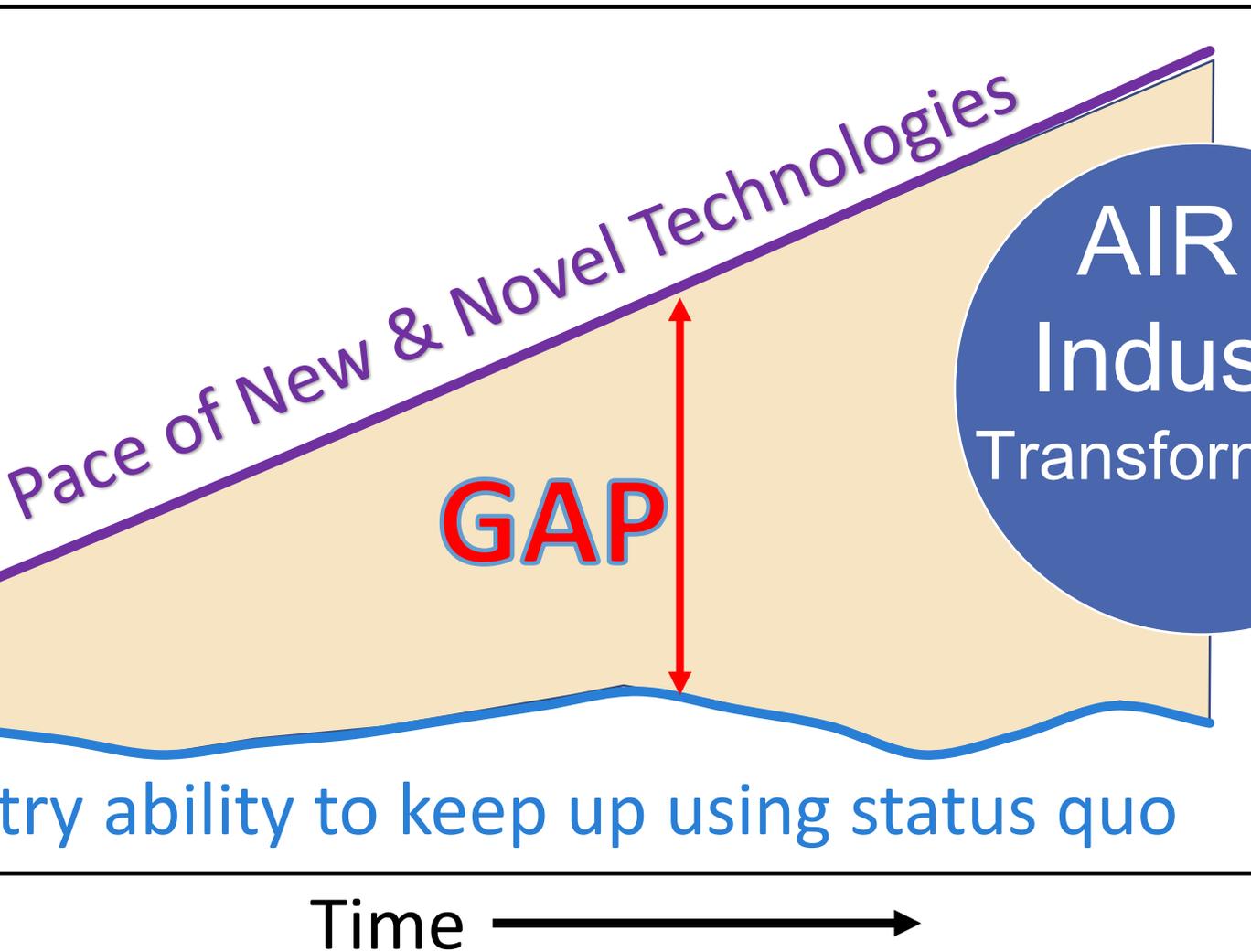
- *Focus on safety & compliance*
- *Fewer 11th hour issues*
- *Defined issues resolution process*
- *Less rework on cert documents*
- *Less sensitivity to personnel changes*
- *Clarity on roles and responsibilities*

**Our joint solution:
Consistent use of CPG principles and tools benefits everyone**

Why are we here?



Why are we here?





Industry Pace of New Applications

GAP

FAA/Industry ability to keep up using status quo



CPG Principles

- Foster Relationships
- Promote Accountability
- Provide Quality Guidance
- Increase Applicant and FAA Compliance Proficiency
- Enable Appropriate Level of Involvement

Foster Relationships

- Consistent and transparent communication
- Clear Applicant and FAA Stakeholder responsibilities & expectations

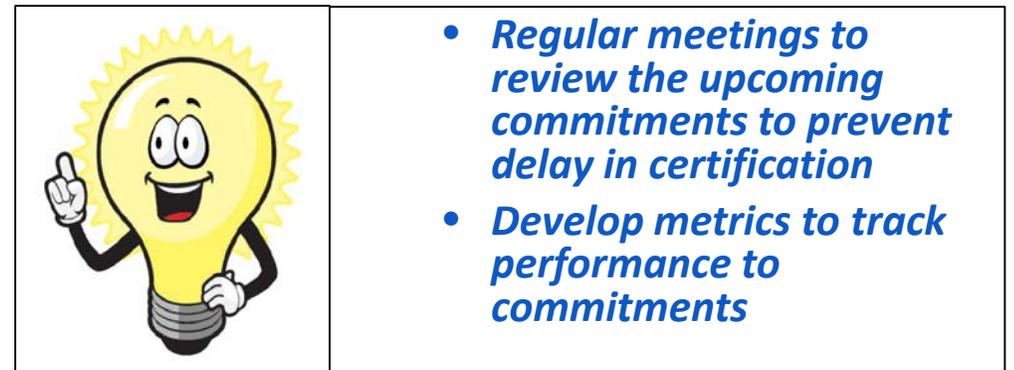


- Familiarization Meetings
- Technical Meetings
- Relationship Gauging Meetings
- Regularly scheduled program reviews



Promote Accountability

- *Both parties held to the PSCP commitments*
- *Both parties meeting jointly agreed upon roles and responsibilities (e.g. PSP, MOU)*
- *Develop a documented escalation process that works issues at the lowest level*
- *Timely response to inquiries*



Provide Quality Guidance

- Early engagement with the FAA's Innovation Center on new / novel technologies / MOCs
- FAA provides guidance to new applicants on expectations for a successful cert project
- Respect and address feedback from both sides
- FAA and Applicant Management treat PSCP as a living agreement on project scope and schedule
 - Changes require coordination
- FAA should provide a consistent approach when guiding applicants in the certification process



Which of these items is a challenge to you?

Engaging early in the process (before application) regarding new technologies, MOC's, etc.

FAA written guidance (CFRs, Orders, AC's, Policy, etc.)

Respecting and addressing feedback from BOTH SIDES.

FAA/Applicant treating PSCP as a living document

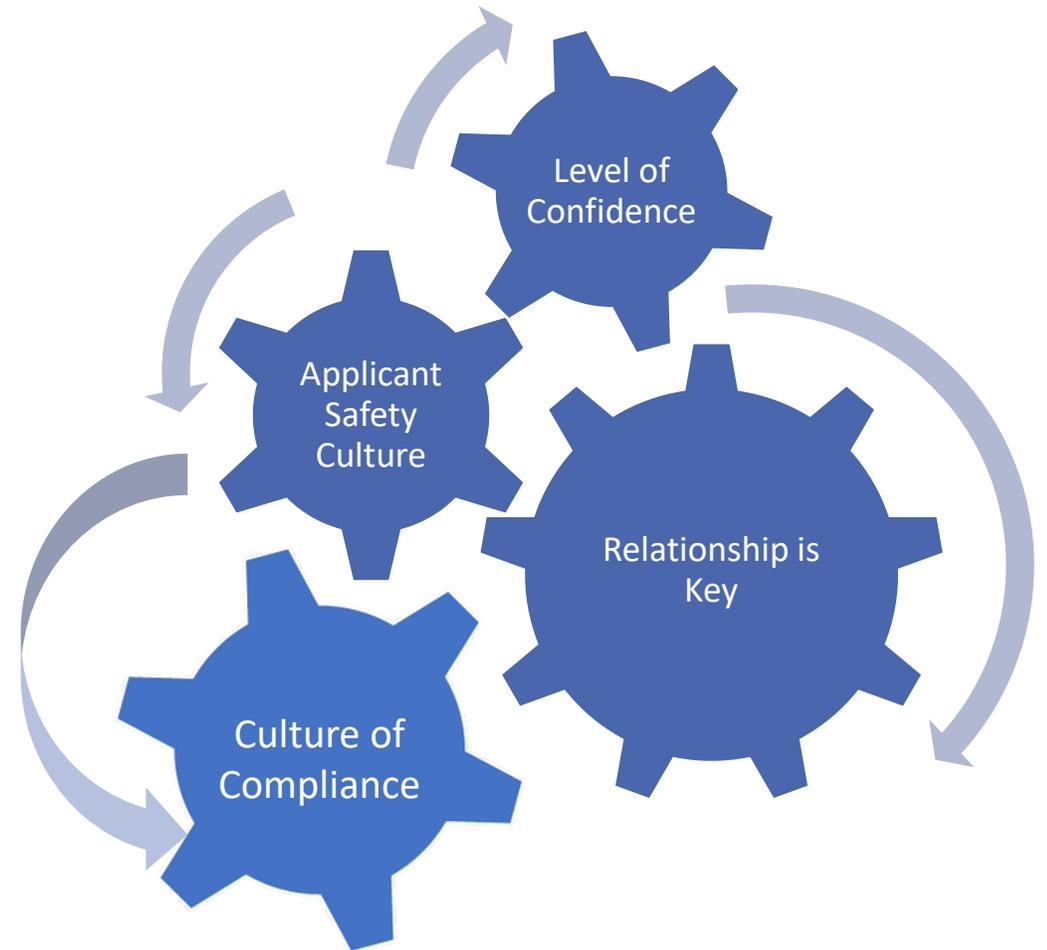
FAA guidance is not consistent

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Increase Applicant and FAA Compliance Proficiency

- **Systems approach** to certification enables appropriate FAA involvement in projects
 - Continuous improvement of processes & procedures
 - Oversight to assess performance
- Foster a **culture of safety and compliance**

Increased FAA confidence leads to



Enable Appropriate Level of Involvement

- **Systems approach** to certification enables appropriate FAA involvement in projects
 - Continuous improvement of processes & procedures
 - Oversight to assess performance
 - **Optimal delegation** using a risk based approach
 - Maximum use of the Applicant's showing of compliance
 - Applicant proficiency level, demonstrated performance, & complexity of project all impact level of involvement
- **Increased FAA post-activity oversight**





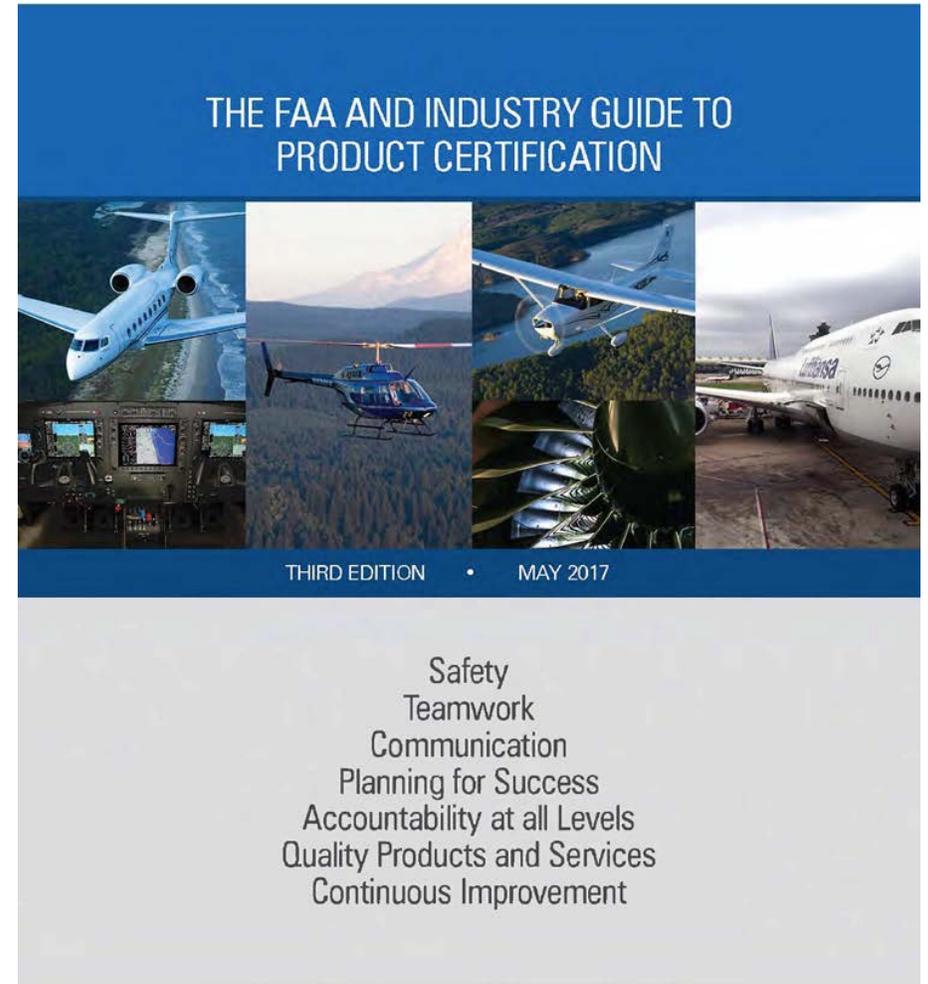
Questions?



FAA and Industry Guide to Product Certification

Roles Across FAA Divisions

Presented by Mazdak Hobbi
Certification Product Guide Implementation Team

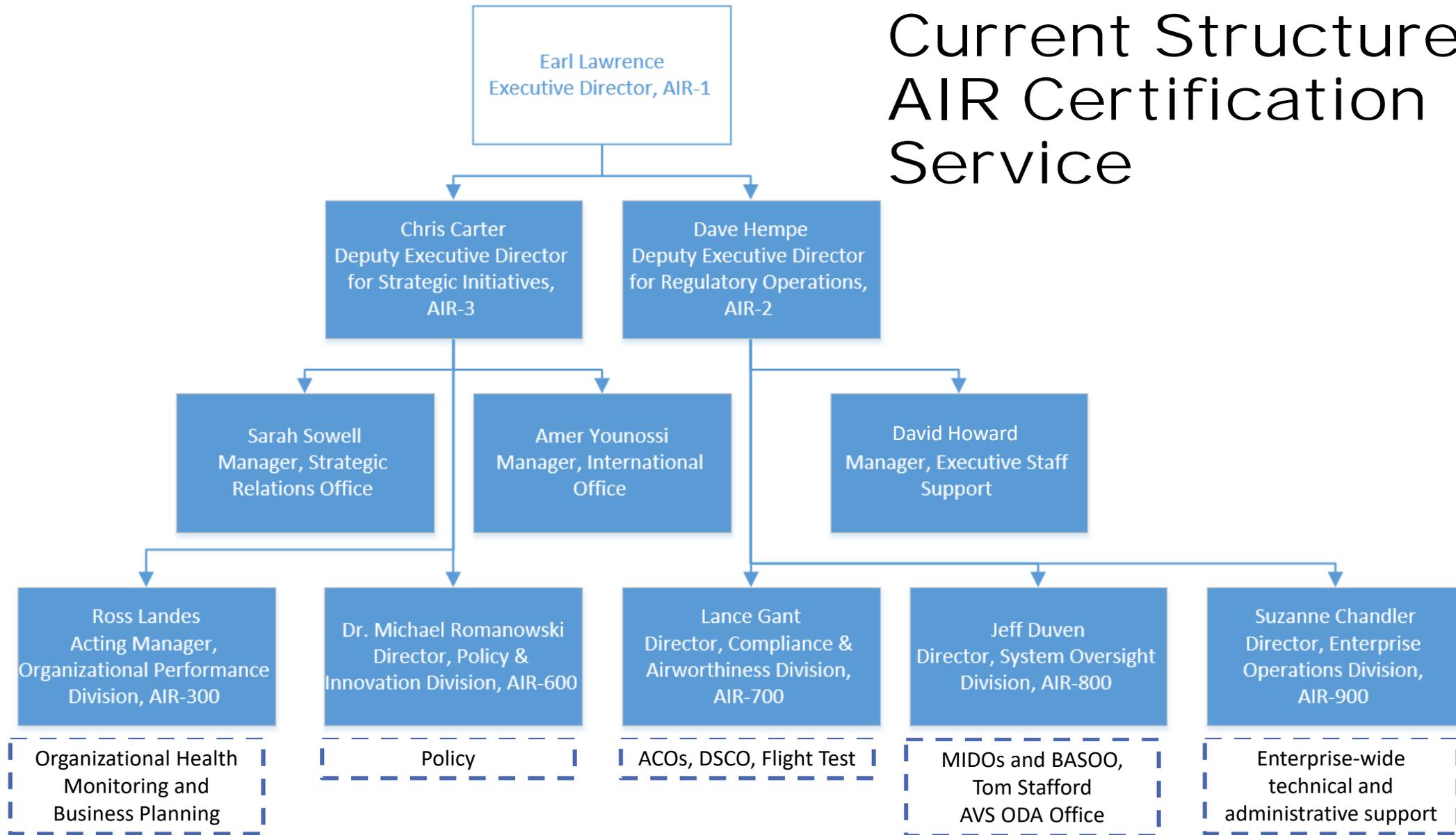


Prepared by AIA, AEA, GAMA, and the FAA Aircraft Certification Service and Flight Standards Service





Current Structure of AIR Certification Service





Current Structure of Flight Standards

Executive Director Rick Domingo, AFX-1
 Deputies
 Lawrence Fields, AFX-2A Robert Carty, AFX-2B

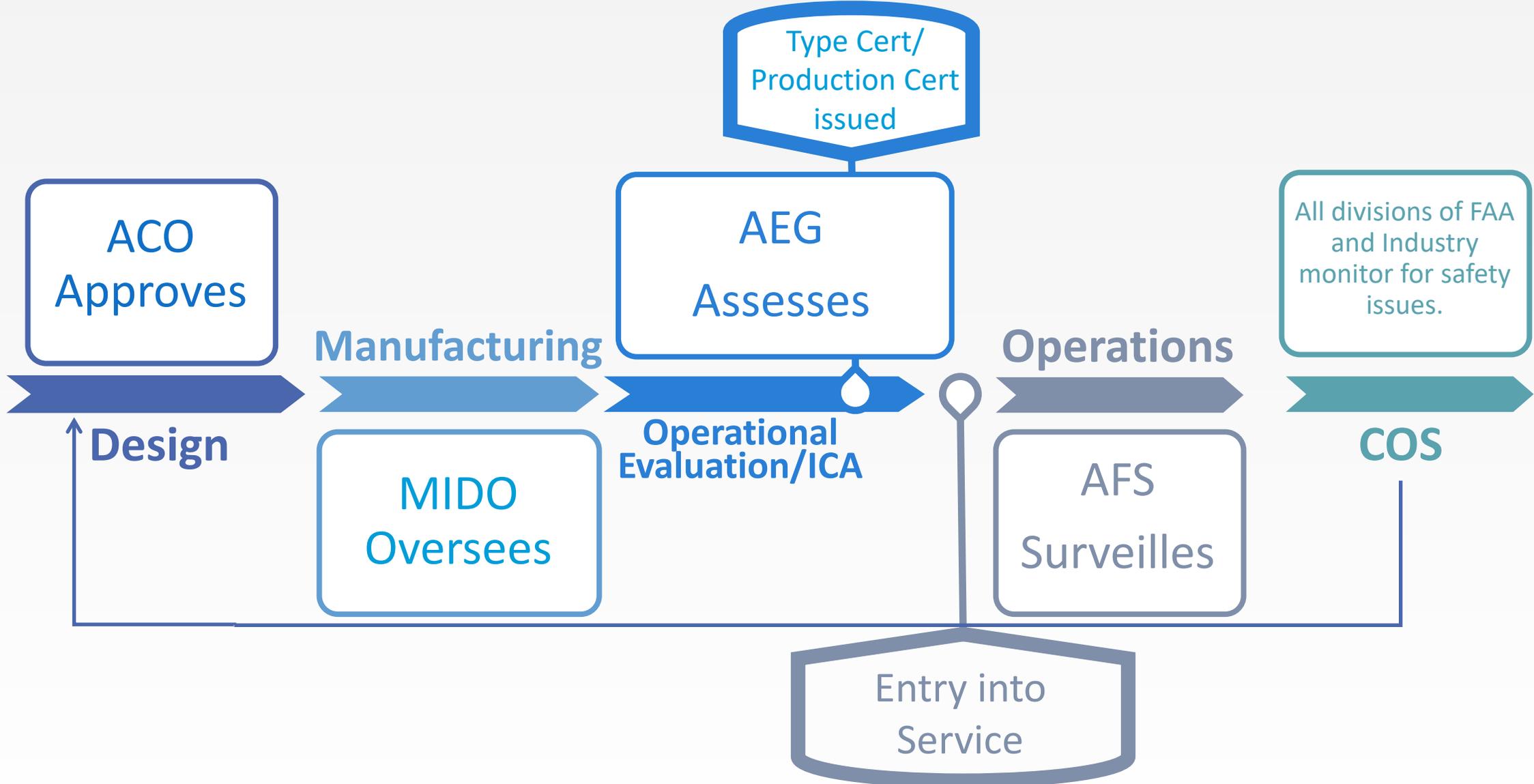


Lifecycle of Certification Project goes across AVS

- **ACOs, Standards & Policy, MIDOs, AEG & Designees**
- **Who is Responsible for What?**
- **Engage early with MIDO**
 - Conformity
 - Airworthiness Certificates
 - Production Quality Procedures
 - Production Approval
- **Don't let operational AEG documents (MMEL, MEL, AMM, etc) come at the last minute. Send in early!**



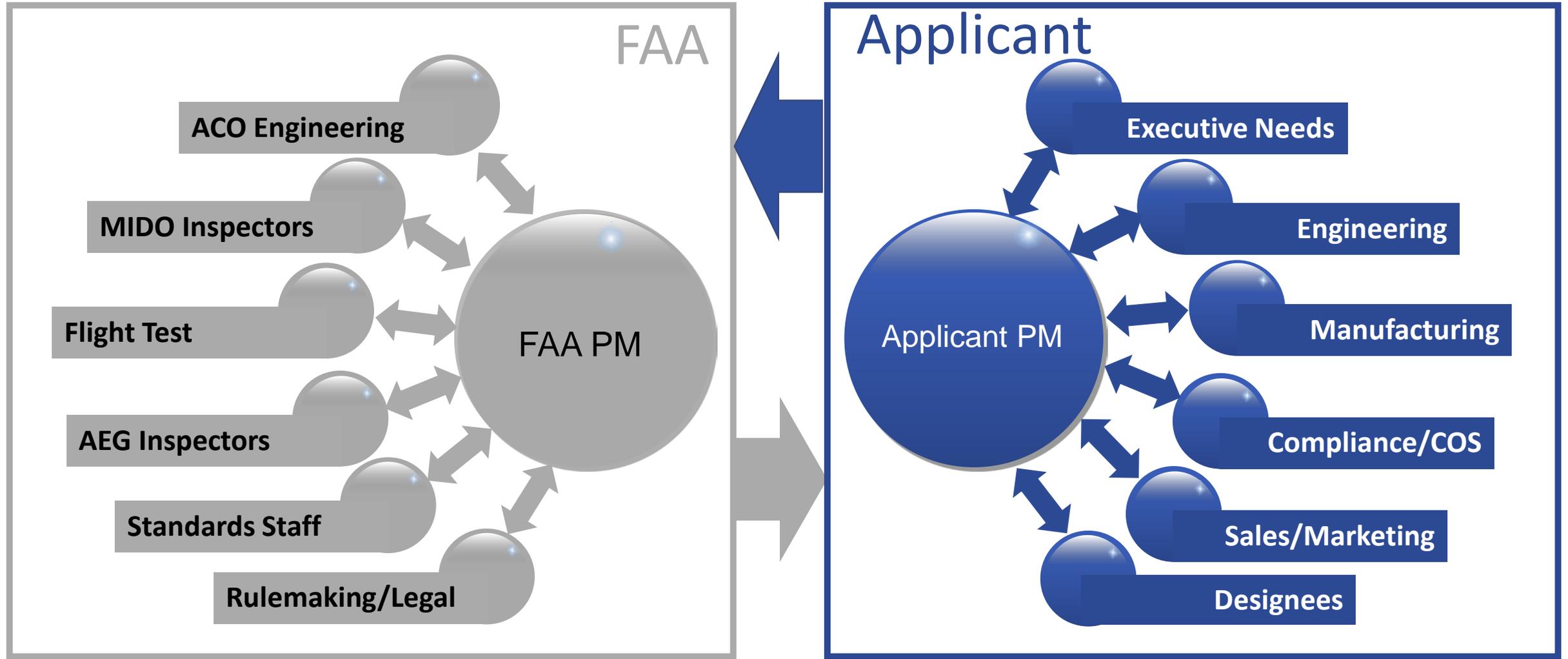
Aircraft Lifecycle Phases



Many Elements of Type Certification



Good Program Management is Key

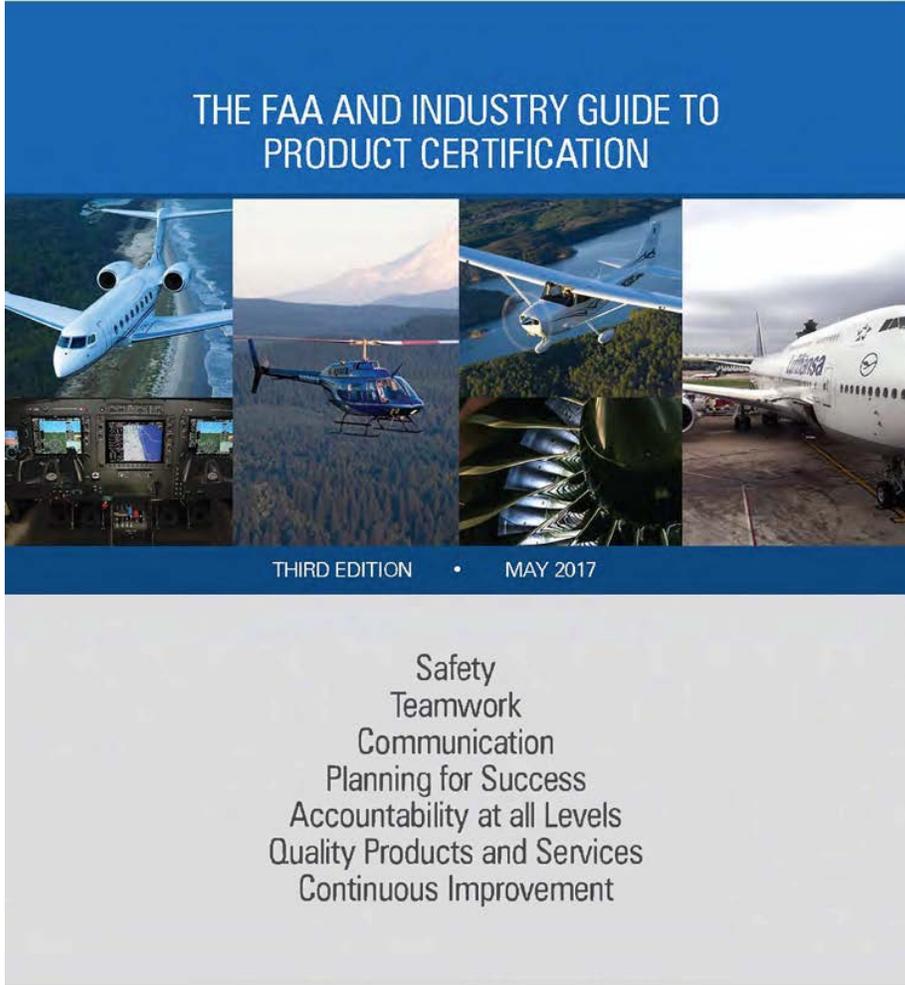




Questions?

FAA and Industry Guide to Product Certification

Project Specific Certification Plans (PSCPs)



Prepared by AIA, AEA, GAMA, and the FAA Aircraft Certification Service and Flight Standards Service





Outcomes of the PSCP discussion

- What is a PSCP?
- Benefits of a good PSCP
- Typical Content of a PSCP
- The PSCP is a Living Document
- Integrated Program Management
- Accountability

What is a PSCP?

- Roadmap that provides the path to certification
- Establishes a mutually agreed plan
- Documents the:
 - Scope / Project Description
 - Certification Basis
 - Methods of Compliance
 - Issue Papers
 - Test & Conformity Plan
 - Also consider entry into service:
MMEL, ICA, FOEB



- Delegation Plan
- Compliance Documentation
- Detailed Schedule
- FAA level of project involvement
- Continued Operational Safety Plan

Refer to CPG Appendices for additional details

PSCP

- CPG includes PSCP templates
 - TC / STC
 - TSOA
 - Complex PMA (no template but TC/STC may be used as a guide)
- Are all of the CPG PSCP elements required?
 - Not all elements are required for every project
 - Some projects may require additional information
 - Single document containing all applicable elements
 - One project level PSCP with multiple Subject Specific cert plans



PSCPs should include all information that provides a clear path to certification and entry into service

PSCP is intended to be living document

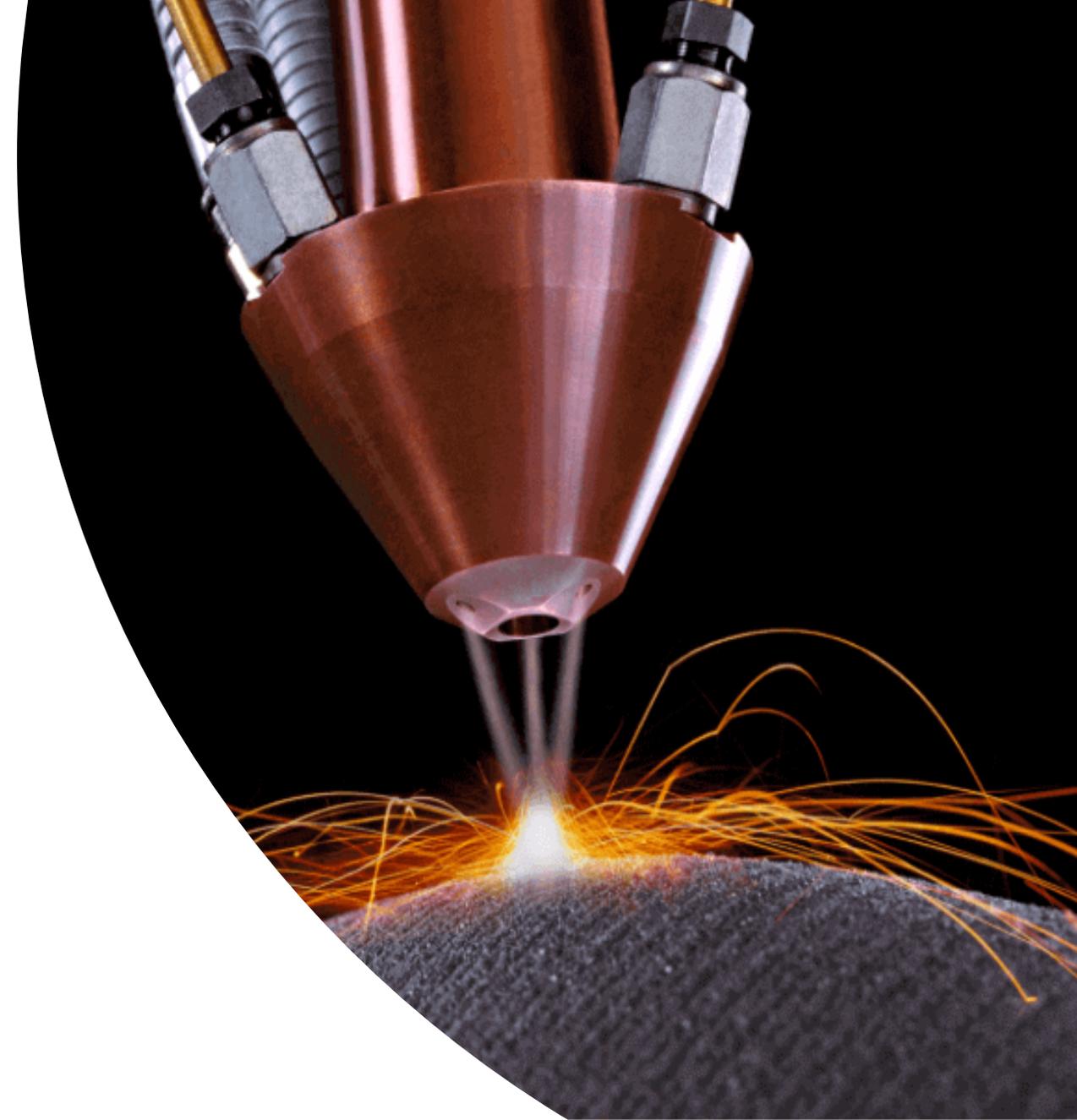
- Revise as changes occur
 - Major issues
 - Design changes
 - Changes in compliance requirements/MOCs
 - Deliverables
 - Milestones / Schedule
- Revisions:
 - Should be jointly managed
 - Require agreement from all parties



Scope/Project Description

What does the FAA expect/need?

- An understanding of what are you doing and why?
- Description of new-novel technology or compliance aspects
 - Include pictorial and text descriptions
- An awareness of system level interactions (for major changes)
- An awareness of product level impacts





Certification Basis

- Early establishment of cert basis is the **KEY!**
 - Airworthiness 14 CFR part XX amendments
 - ELOS, Special Conditions, Exemptions
 - Changed Product Rule Assessment (21.101)
- Also consider
 - Emissions (part 34) & Acoustics (part 36)
 - Part 26 – Continued Airworthiness and Safety Improvement for Transports
 - Operational design requirements (i.e. part 121, 135, etc)
 - Existing models or hardware that serve as the basis for the proposed TC/ATC/STC/Design Change



Compliance & Delegation Plan

A sample compliance checklist/matrix summary table for each applicable requirement

14 CFR	Amd Level	Document #	Document Title	Document Type	MOC	Approver	Approval Date
25.1309	25-123	SA-01-XXX	Safety Analysis	Report	Analysis	FAA	1/1/2018
33.87	33-32	ET-01-XXX	150 HR Endurance Test	Report	Test	DER	Pending

A well constructed compliance checklist can aid in tracking progress and closing the certification activity.



Test & Conformity Plan

- Planning, preparation and conduct of required testing for certification
- Detailed requirements for tests, preparation and level of FAA involvement
 - Test plan approval
 - Test risk assessment
 - Witnessing
- Conformity inspection plan
 - Process and documentation for applicant statements of conformity
 - Identify what FAA conformities are necessary (TC & PC) (sometimes, none, but still address it)
 - Process and documentation for FAA conformity



Detailed Schedule

Ensure it's realistic and takes into account Applicant & FAA cycle times

- Important project milestones
- Project gates to stay on schedule
- Planned submittal dates
- Considerations for
 - Flight Test
 - MIDO
 - AEG
- TIA issuance(s)
- Conformity & testing
- Expected (S)TC/PC issuance





Communications Plan

- Communication and coordination paths between the Applicant and the FAA.
- Regular status meetings/calls to ensure deliverables and expectations are on track.
- Issue resolution process should be detailed for when disagreements arise. (if not covered in PSP)
- Account for English as a 2nd (or 3rd) Language
- List of known issues that need resolution

Let's Eat
Grandma!

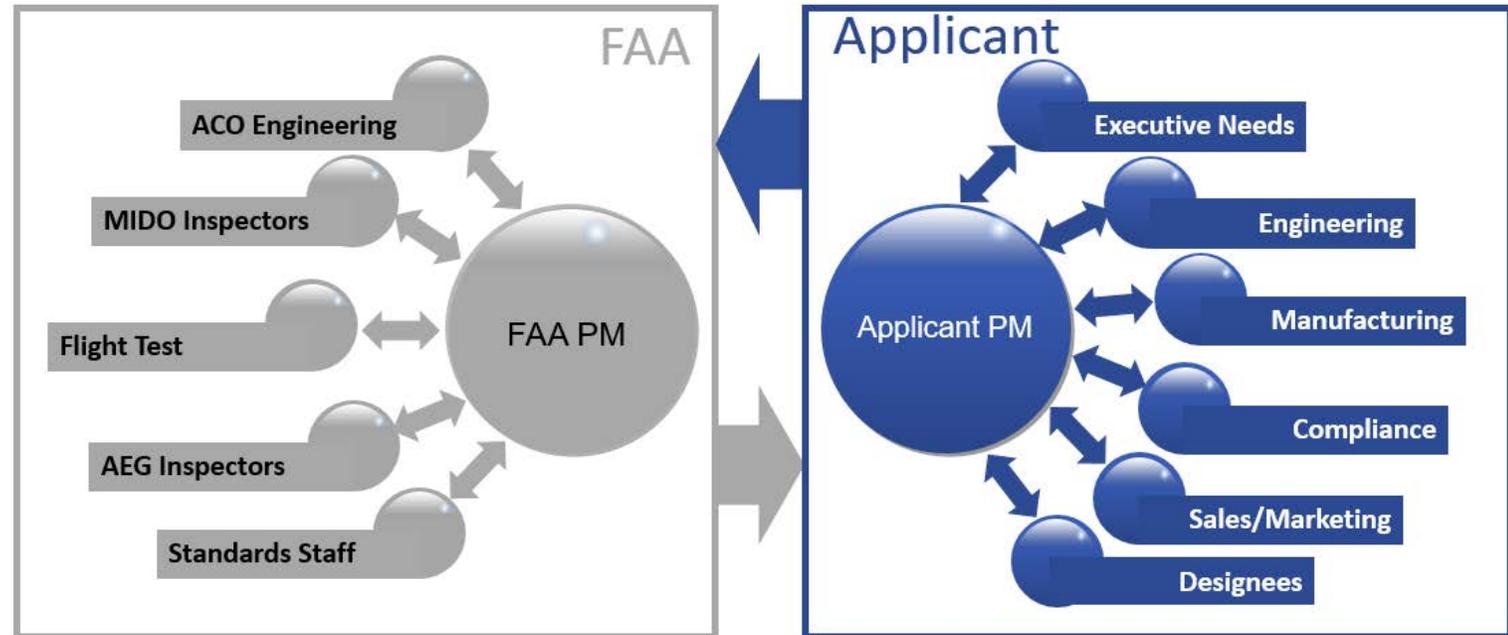
What's In It for Me?

- Smoother, more predictable project flow
- Earlier identification of issues
- FAA confidence in plan can lead to more delegation
- Clearly understood resource requirements
- Earlier engagement of other FAA stakeholders



The PSCP is an AGREEMENT between the FAA and Applicant

- PLAN
- AGREE
- HOLD ACCOUNTABLE





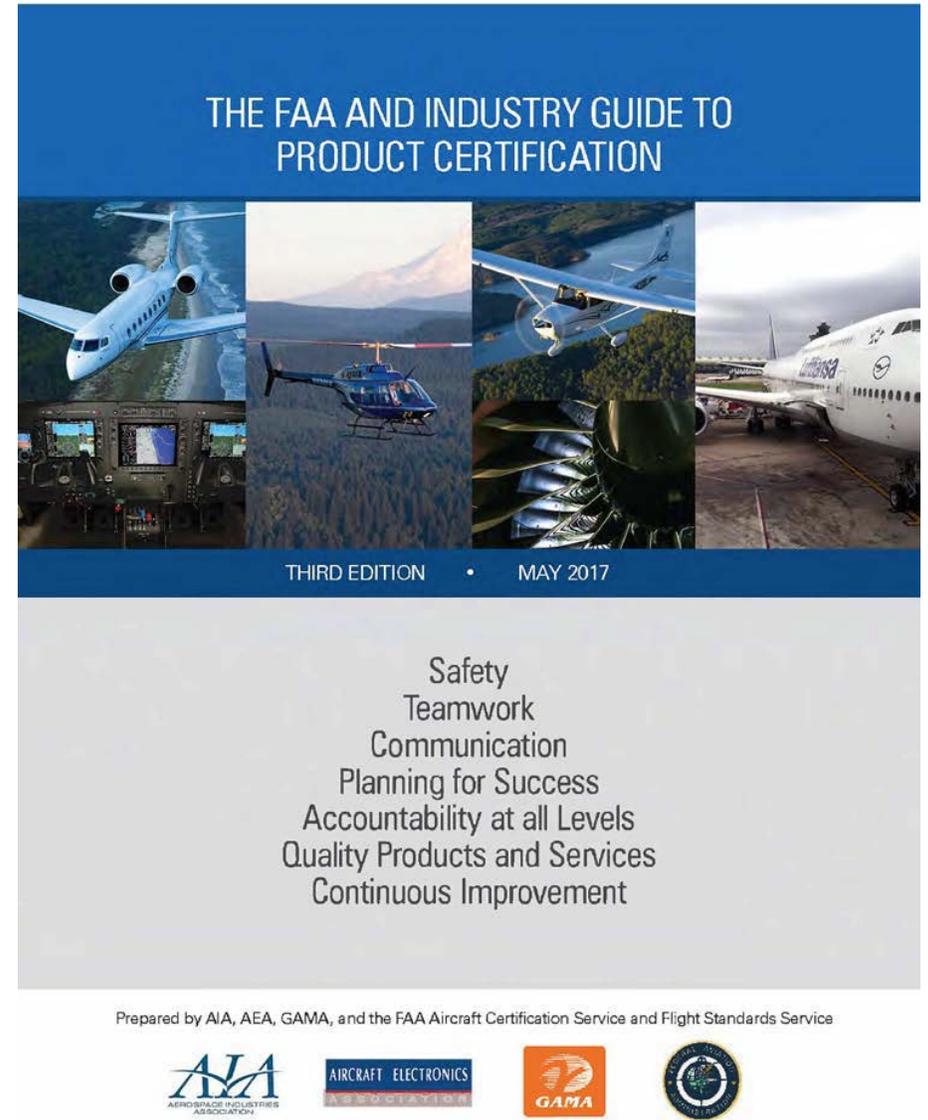
Questions?



Certification Process Guide Workshop

CPG Tools: Partnership for Safety Plans

Co-presented by the FAA and Industry
Certification Product Guide Implementation Team



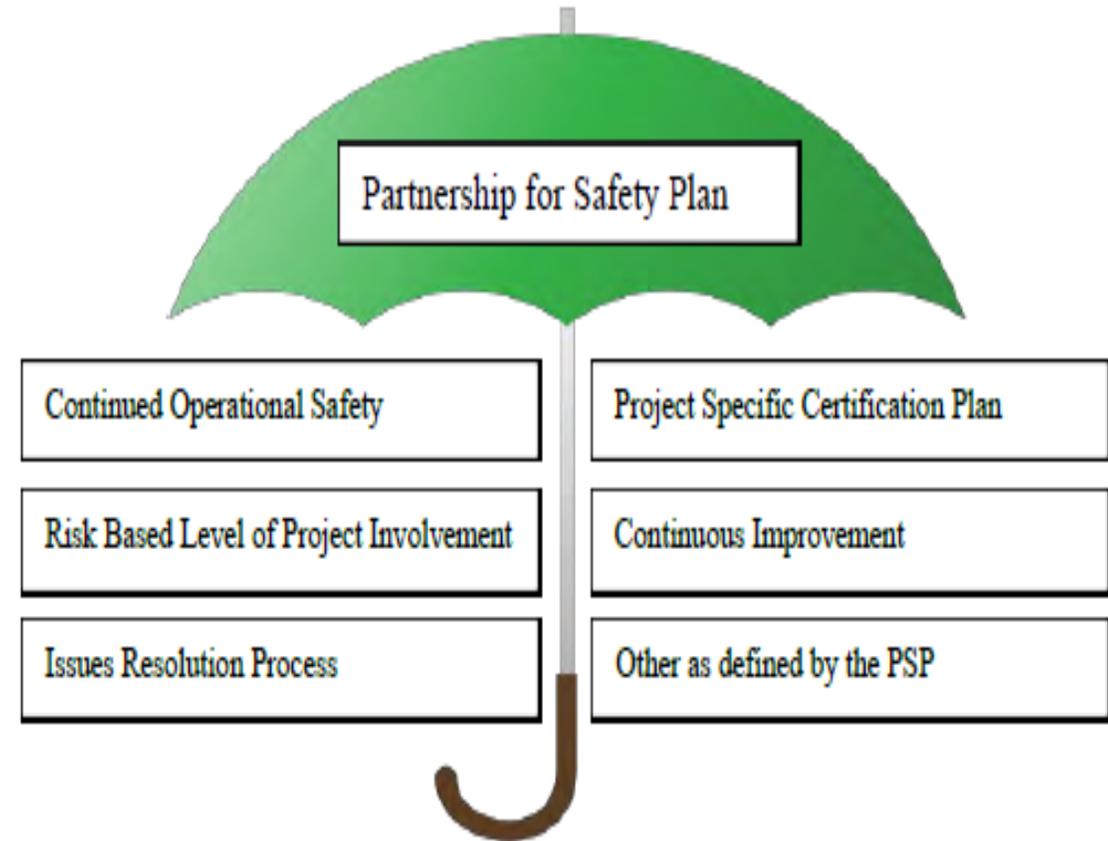


Outcomes of the PSP discussion

- Why have a PSP?
- When does it make sense to develop a PSP?
- Past experience with PSPs? What's different now?
- Best practices – how to develop and maintain a PSP

What is a Partnership for Safety Plan (PSP)?

- **Defines working relationship** between the Applicant and the FAA
- **Establishes agreement on how to improve certification process** to provide mutual benefits
 - Document operating norms
 - Define an issue resolution process
 - Discuss lessons learned
 - Develop improvement plans
 - Determine performance measures





Benefits of having a PSP

Supports safety through increasing proficiency of certification processes

- **Certification processes mature by:**
 - Setting expectations
 - Open and frequent communication
 - Utilizing an Issue Resolution process
 - Minimizing impact of personnel changes
 - Establishing goals
 - Focusing on Continuous Improvement
 - Measuring and reviewing progress



PSP – Scalable to fit needs

Less Experienced Applicants

- PSP includes only the elements applicable to the level of cert work (1 pg?)
- Start with multiple, successful PSCPs then move to PSP

Experienced Std Cert

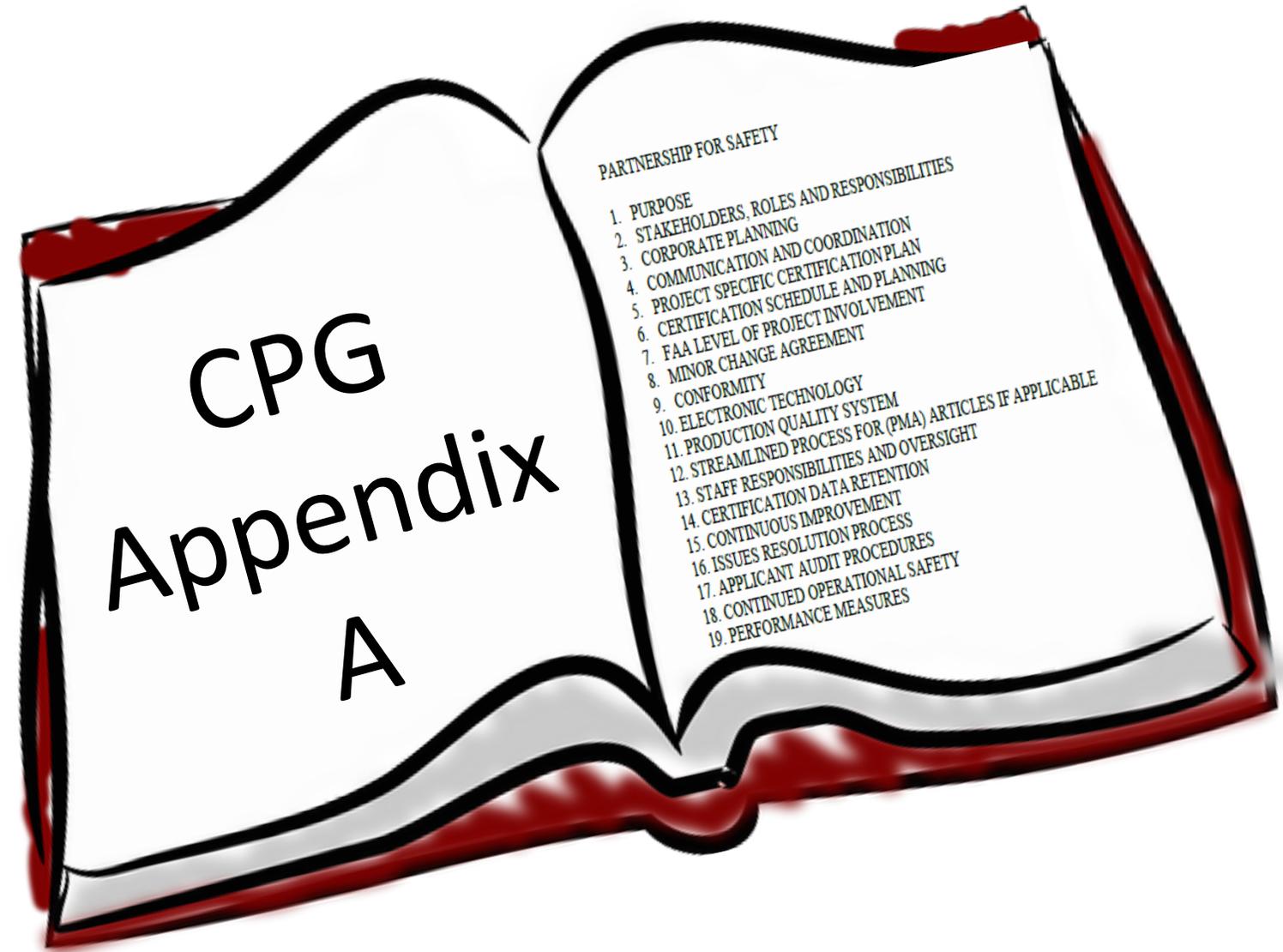
- Applicants with high volume of certification work should have a PSP

ODA Holders

- PSP is strongly recommended for all ODA Holders
- ODA manual may contain some PSP content
- PSP should not duplicate information already in ODA manual

PSP Contents

FAA and applicant
customize the
content





Communication & ordination



- Commitment to Open and Regular Communication
- Reviewing Performance and Lessons Learned
- Continuous Improvement Opportunities
- Identifies Focals

PSP Contents



Corporate Planning

- Early planning for potential projects
- New & novel technologies
- Emerging FAA initiatives
- New/revised Orders and Policy
- Scorecard

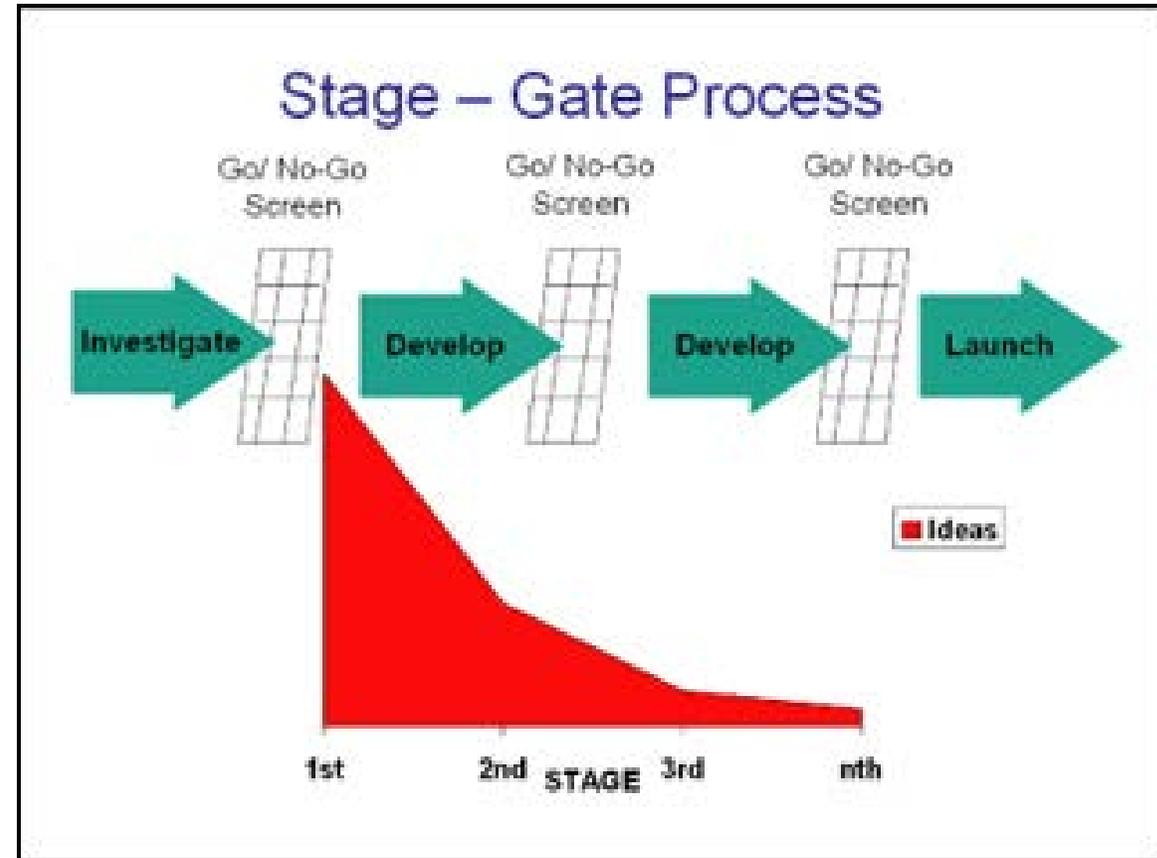


PSP Contents



Certification Schedule & Planning

- Schedule with defined gates
- Operating Norms defining expected response times
- Track project status versus agreed schedule (review meetings)



PSP Contents



Issue Resolution

PSP Contents



- PSP should contain a documented process to resolve disagreements between the Applicant and the FAA
- CPG encourages:
 - Resolution at the lowest level
 - Prescribed steps for escalation

Continued Operational Safety

- Applicant Commitment to Continued Operational Safety
 - Timely responses
 - Dedication of resources
 - Periodic reviews to discuss open issues and trends
- Applicant/FAA agreement to work collaboratively
- Accident/Incident investigation protocols





What would you measure to assess the relationship between the FAA and applicant?

Performance Measures

Example of how a PSP Scorecard review could be conducted:

Satisfactory	Discussion/ Action Needed	Item
PSP Scorecard (FAA Considerations in Evaluating Company XYZ)		
		1. General
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Company and FAA conduct periodic leadership and management reviews to provide early insight into safety and regulatory compliance matters. Reviews include appropriate company personnel.
		2. ODA Stakeholder Roles & Responsibilities
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Company operates within the limitations prescribed within the FAA approved ODA Procedures Manual, latest revision.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Company performs a robust self-audit of the ODA Unit.
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Company recommends properly qualified personnel to the ODA Lead Administrator for consideration in ODA Unit membership.

Satisfactory	Discussion/Action Needed	Item
PSP Scorecard (Company XYZ Considerations in Evaluating FAA)		
<input type="checkbox"/>	<input type="checkbox"/>	1. General
<input type="checkbox"/>	<input type="checkbox"/>	<i>Deliberately Left Blank</i>
<input type="checkbox"/>	<input type="checkbox"/>	2. ODA Stakeholder Roles & Responsibilities
<input type="checkbox"/>	<input type="checkbox"/>	FAA maximizes utilization of the company (ODA or Designees) within the limits of the designee's authorizations.
<input type="checkbox"/>	<input type="checkbox"/>	FAA maximizes delegation to the greatest extent possible within Title 14, Code of Federal Regulations (14 CFR) part 183 subpart D considering Company XYZ's capability as an applicant, Type Certificate (TC) holder, Production Certificate (PC) holder, and ODA holder.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	FAA is transparent in assessing the company's capability when considering advanced delegation opportunities.

- PSP Scorecard includes items for FAA to consider when evaluating Company and vice versa
- Discussion points recorded during the review within each box
- Ratings: Satisfactory, Satisfactory + Discussion/Action Needed, Discussion/Action Needed
- Results reported out during annual company/FAA Executive meeting
 - Report out only on items that were ranked as "Discussion/Action Needed"

PSP Contents

Additional Possibilities for a PSP

- Use of Electronic Technology
- Company Conformity
- Data Retention Agreements
- Response time commitments
- Prioritization of activities
- Safety Management System (SMS)
- Compliance Assurance Systems (CAS)
- Minor change in type design/PMA process



PSP – How to get started?



- Start with an FAA and applicant stakeholder discussion
 - Identify what goals are needed in the “relationship”
 - Establish the PSP scope
- Applicant drafts the PSP
 - Use Appendix A in CPG as a starting point in PSP development
- FAA and Applicant finalize and sign the PSP

Generally takes a few months to obtain final agreement



Maintaining a PSP



- PSPs are living documents
 - May be amended by mutual consent
 - CPG sets expectations of regular reviews and updates
- So when could reviews be conducted?
 - Type Board meetings
 - Personnel Changes
 - Dedicated PSP review meetings (semiannually, quarterly, etc.)



- PSP documents relationship agreements for joint success
- As little or as much as necessary to document desired practices
- Keep it Real and update as needed!

Questions?





- Review the CPG Guide on the FAA Website:
www.faacpg.com (Click on the CPG tab)
- Review the FAA plans for the future described in the AIR Transformation presentations:
https://www.faa.gov/about/office_org/headquarters_offices/avs/offices/air/transformation/
- 8100.18 - Aircraft Certification Service Organizational Realignment References
https://www.faa.gov/regulations_policies/orders_notices/index.cfm/go/document.information/documentID/1031189
- Contact your FAA representative for more information