

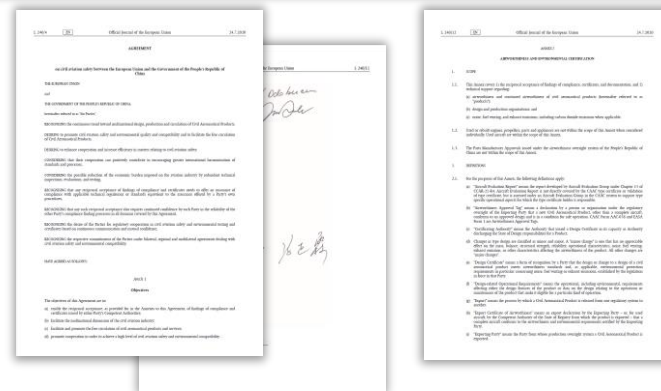
# **EU-CHINA BILATERAL AIRWORTHINESS CERTIFICATION**

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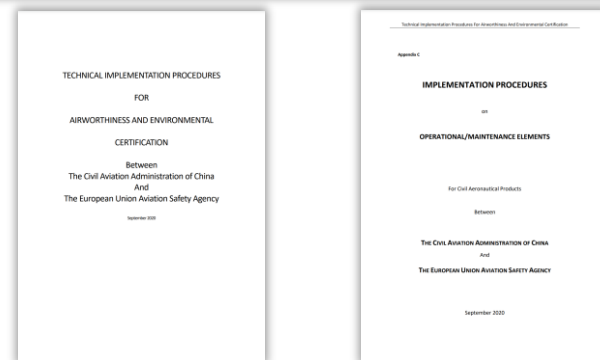
# BASA: Definition

- A Bilateral Aviation Safety Agreement (BASA) is an international agreement enabling reciprocal acceptance of certificates and findings of compliance issued by the respective Competent Authorities
- It allows derogation from domestic laws and creates rights and obligations for the signatories (including regulators and industry)
- The EU-China BASA is structured in:
  - Agreement
  - Annexes
  - Technical Implementation Procedures (TIP)

## Agreement, Annexes

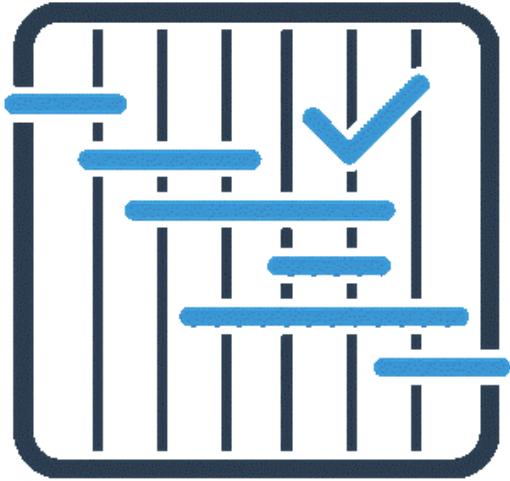


## Technical Implementation Procedures



# EU-China BASA

SCOPE



Application to the civil aviation regulatory system of the P.R.C. and to the civil aviation regulatory system of the EU.

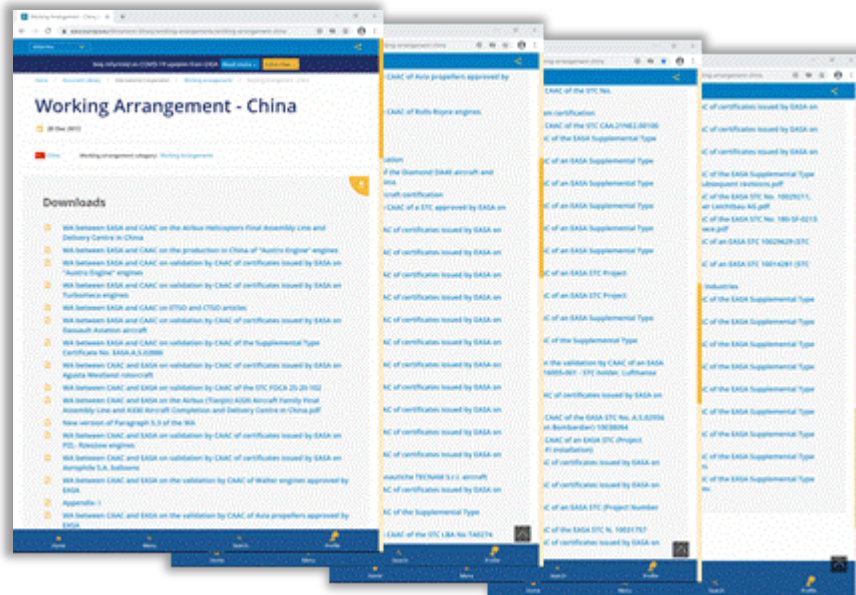
- Airworthiness Certificates
- Environmental Testing and Certificates
- Design and Production Organizations
- Maintenance Organizations
- Personnel Licensing and Training
- Operation of Aircraft
- Air Traffic Services and Air Traffic Management
- Other areas

Annex 1 on Airworthiness and Environmental Certification

# One Document; Clear Processes

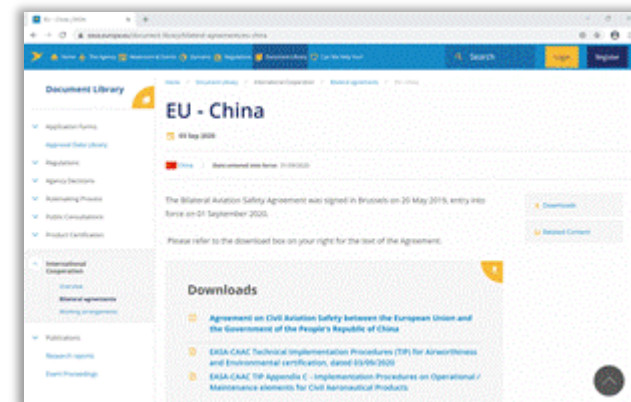
**BEFORE**

**Multiple Working Arrangements**



**NOW**

**One Document**



# Wide Range of Products



Civil Aircraft

Aircraft Engines

Propellers

Sub-assemblies

Appliances

Parts



# Efficient Processes

- No need for negotiation of individual Working Arrangements
- Straight identification of processes to follow
- Time and costs should be more predictable
- Allows for mutual recognition of Production Certificates
- Accounts for Technological Innovation
- Governance via Certification Oversight Board
- Continuous Qualification of Authorities

## CERTIFICATE APPROVALS: PROCESSES



Automatic Acceptance



Administrative Validation



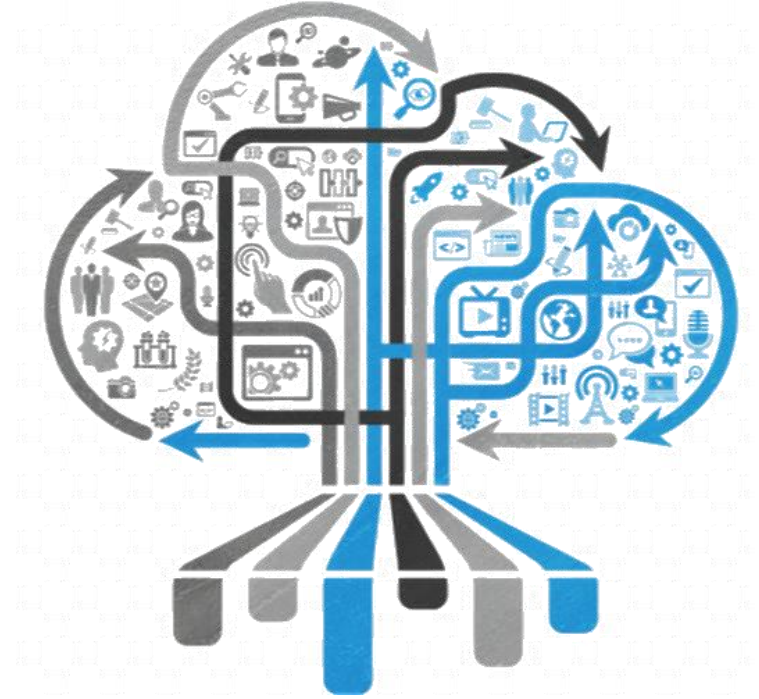
Streamlined Validation



Technical Validation

# Technological Innovation

- At a time of rapid changes, the EU-China BASA also supports technological innovation
- This is reflected in processes related to technical validations
- New technologies will require further exchanges with and between Authorities
- Existing technology applied for the first time to a given product may not always be novel
- Instead, novel applications of an existing technology in an unconventional manner should be focus of further analysis





# Continuous Improvement

- Sharing relevant information on standardisation and quality management activities performed by the Regulator on its own system
- Participation, as observer, in standardisation or internal quality assurance activities performed by the other Regulator on its own system
- Direct recurrent assessments by the Regulator of one Party, of the other Party's certification and oversight system, where appropriate
- Feedback about one Regulator's technical and operational performance gathered during validation activities conducted by the other Regulator





# Summary

- The EU-China Bilateral Aviation Safety Agreement is a milestone in relations between Europe and China
- It sets a framework from which to continue extending mutual recognition of safety systems
- The agreement provides considerable benefits to both industry and regulators
- It paves the way for the continuous improvements of authorities to the benefit of global aviation



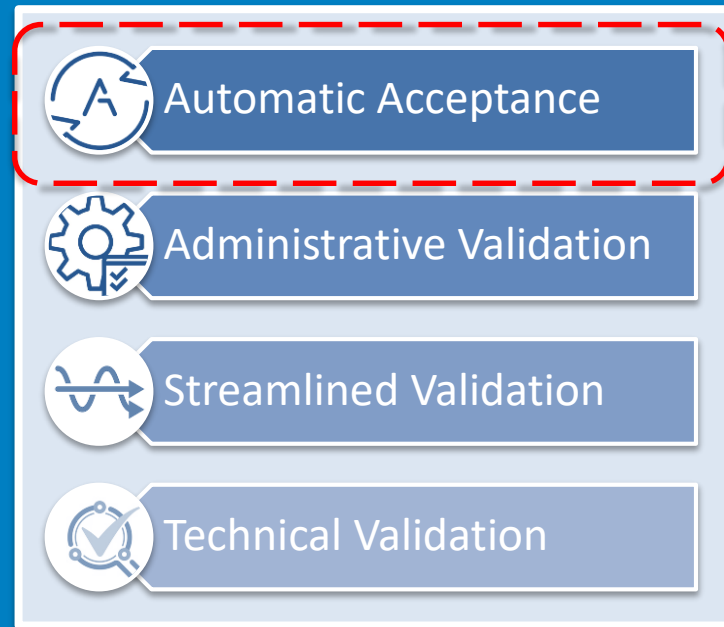
[easa.europa.eu/connect](https://easa.europa.eu/connect)



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# CERTIFICATE APPROVALS: PROCESSES



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# Automatic Acceptance



- the Validating Authority (VA) recognises and accepts the Certifying Authority's (CA) certificates without any technical investigation or validation exercise.
- Certificate of the CA is recognised by the VA as equivalent to its own certificate **issued in accordance with its legislation and procedures.**
- The VA does not issue its own corresponding certificate

Full risk-based approach: it is not about relying on the CA to ensure compliance with VA requirements

Approval is recognized as valid in the VA system without showing of compliance with applicable VA requirements.



# Automatic Acceptance

- TIP §3.2 deals with principles and scope of application:
  - ❖ Non-significant major changes to a type certificate *approved within the European Union regulatory system (incl. per Part 21.A.263 c) 8) & 9) privilege)*
  - ❖ All design changes classified as minor in accordance with CCAR-21 or EASA Part 21.A.91
  - ❖ Design data for a major repair approved *within the European Union regulatory system (incl. per Part 21.A.263 c) 5) privilege)*
  - ❖ Design data for a minor repair
  - ❖ For parts and appliances, all design changes classified as minor in accordance with CCAR21 and EASA Part 21
  
- TIP §3.3.x gives details on the applicable process for each case



# Automatic Acceptance

- No establishment of VA applicable requirements / no Applicant's declaration of compliance / No CA statement of compliance with VA requirements.
- Update of the VA Type Design Document and its notification to the VA are not required by the current BASA/TIP.
- However, it is advisable to the EU TCH to track the status of CAAC validity of EASA-certified design changes in view of the issuance of the Export CoA (see further section 7)
- Compliance with CAAC *Import Requirements* is not required to consider the design change validated in China, but it's a condition for exporting the product to China.





# Automatic Acceptance

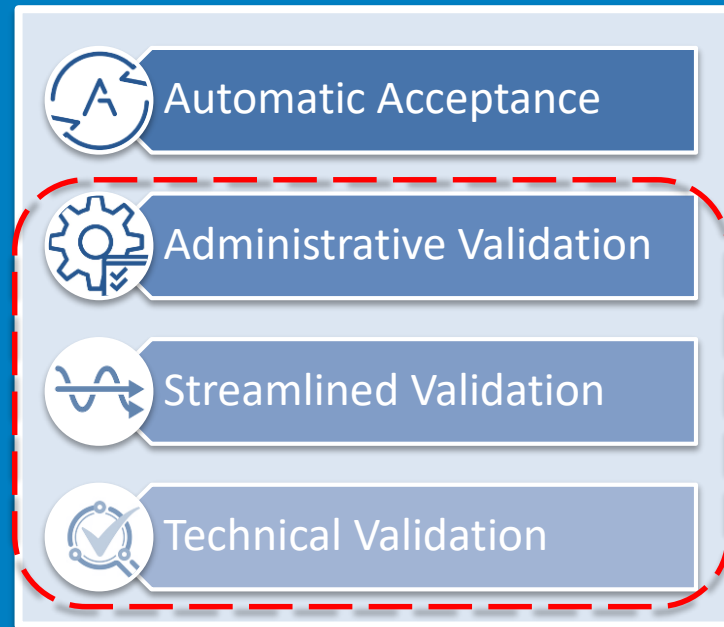
→ In case an automatically accepted design change requires the update of the CAAC Validation of Type Certificate (VTC) or its Data Sheet (VTCDS), a further application for administrative update of the VTC or VTCDS shall be made by the VTC holder and the necessary data shall be provided to CAAC.



- ❖ No compliance technical data to be provided
- ❖ No CSV requested to EASA for this purely administrative documentation update
- ❖ There may be fees and an inherent administrative delay to be taken into account



# CERTIFICATE APPROVALS: PROCESSES



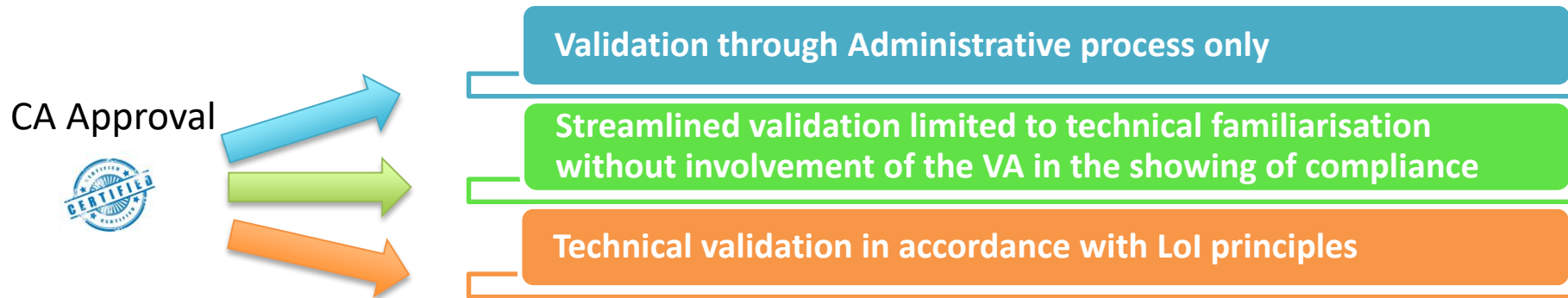
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# Validation of certificates and approvals

For approvals not eligible to automatic Acceptance: risk-based approach influenced by:

- ❖ the extent of past certification and operational experience with similar CA products
- ❖ specific design features and operational characteristics of the project presented for validation.

This risk-based approach establishes three paths for validation:



→ TIP §3.5.x gives details on the applicable process for each case.

# Validation of certificates and approvals

→ All three validation processes (Administrative Validation, Streamlined Validation, and Technical Validation) require:

- ❖ A formal application to the VA
- ❖ a CA's statement that the design complies with the VA certification basis
- ❖ and issuance of a VA design approval or certificate.



→ However, the intermediate steps between application and VA approval vary depending on which process is applied.

→ §3.5.x gives details on each step of the applicable process for each validation path.



# Administrative Validation

→ Applicable only to CAAC validation of:

- ❖ EU TSOA
- ❖ EU Non-significant STCs

→ **NO technical investigation:**

Complete application package received by the Validating Authority → Validated Certificate is issued by the VA within fifteen (15) working days, with notification to the CA.

→ The minor / major and significant / non-significant classifications are **made by the CA** in accordance with the criteria and definitions defined in the Annex (similar to EU Part 21) and interpreted in accordance with the applicable rules and procedures of the CA.

# CERTIFICATE APPROVALS: PROCESSES



Automatic Acceptance



Administrative Validation

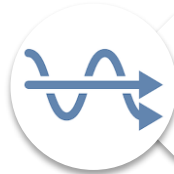


Streamlined Validation



Technical Validation

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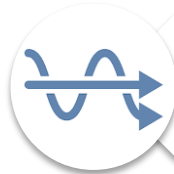
# Streamlined Validation

## → Process applicable to:

- ❖ CAAC validation of some EU significant STCs or Significant Major Changes following conditions of Appendix B (see further)
- ❖ EU validation of some Chinese Technical Standard Order Authorisation as agreed between EASA and CAAC

## → **Limited to technical familiarisation without involvement of the Validating Authority in the showing of compliance activities:**

Once the technical familiarisation is completed, the process is limited to the administrative actions required for the VA to issue its design approval based on the corresponding CA approval and a certification statement from the CA to the VA.

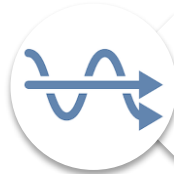


# Streamlined Validation

→ Application package supplemented with a technical familiarisation package presenting the design change and focusing on:

- ❖ Any novel design features, novel applications of existing technology, or unconventional uses of the product
- ❖ Any design features where experience has shown that an unsafe condition might occur)
- ❖ Proposed applicable VA requirements with which compliance has been established (incl. exceptions induced by application of point 21.A.101, if applicable)
- ❖ Any newly proposed interpretations or Means of Compliance (MoCs) for existing standards
- ❖ For Parts & Appliances, a dedicated list of elements detailed in §3.5.4.4.





# Streamlined Validation

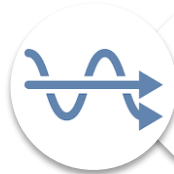
## → Technical Familiarisation:

- ❖ Only to gain understanding of the approval to be validated
- ❖ Focus on general compliance methodologies used by the applicant to show compliance with the applicable VA requirements for the change (no involvement in compliance showing activities)
- ❖ Format (desk review, teleconference, FTF meeting) to be agreed between CA and VA (sense of efficiency!)
- ❖ Will allow the VA to check/confirm the applicable VA certification basis
- ❖ Ends 20 working days after start of review and - when applicable - following the completion of any necessary specific meeting

## → Upon completion of the Tech Fam:

- ❖ VA issues corresponding design certificate within 15 working days





# Streamlined Validation

TIP Appendix B gives the conditions for the Streamlined Validation Process

→ Significant Supplemental type certificates or significant major changes issued by the European Union Competent Authority will be validated under a streamlined validation process **whenever they are not affected** by one of the following conditions:

- ❖ EASA cert. basis include a new or amended SC, ESF or Deviation
- ❖ Introduction of new technologies to critical systems or critical components
- ❖ Novel application of existing technology within critical systems or critical components
- ❖ Significant Standard Differences (SSDs) resulting in type design changes (including approved manuals)
- ❖ Area where acceptable MoCs, at an industry level, continue to evolve, there is subjectivity in their application, and upon agreement between the VA and the CA, further VA involvement is necessary

# CERTIFICATE APPROVALS: PROCESSES



Automatic Acceptance



Administrative Validation



Streamlined Validation



Technical Validation

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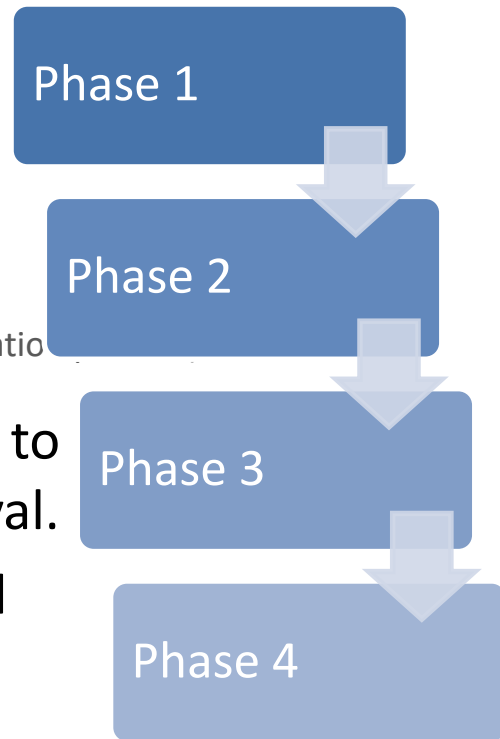
# Technical Validation: Process

## → Process applicable to:

- ❖ CAAC validation of EU TCs/RTCs + EU significant STCs or Significant Major Changes that do not fulfill conditions of Appendix B
- ❖ EU validation of Chinese certificates and approvals except:
  - ❑ Minor Changes/Minor Repairs (Automatic Acceptance)
  - ❑ Some CTSOAs as agreed between EASA and CAAC (Streamlined Validation)

→ The VA may choose to limit the Technical Validation to application and then issue directly its design approval.

→ Technical Validation can be performed as sequential or concurrent





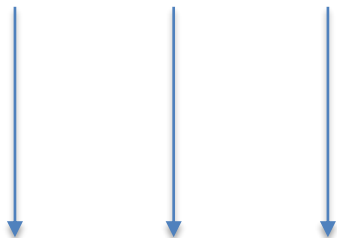
# Technical Validation: Phase 1

## OBJECTIVE

## GENERAL FAMILIARISATION

### Beginning

Acknowledgement of  
Application by VA



Establishment of VA  
Team

### End

- During the general familiarisation meeting, the applicant will present an overview of the project to the VA and familiarise the VA with the design, as currently known (overview of the product, main technologies utilised and any unusual characteristics)
- This briefing shall also include a high-level project schedule to enable the VA to acknowledge the main milestones of the project and establish the VA project team.
- A general familiarisation meeting may not be required if the VA agrees that changes from previously validated designs do not warrant the briefing.

*Ref. Paragraph 3.5.5.5*



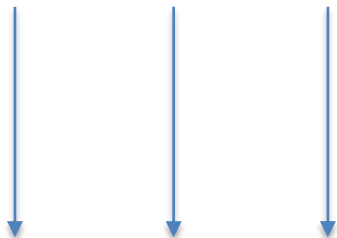
# Technical Validation: Phase 2

## OBJECTIVE

## TECHNICAL FAMILIARISATION AND ESTABLISHMENT OF VA CERTIFICATION BASIS

### Beginning

First Technical  
Familiarisation Meeting



Establishment of VA  
Certification Basis

### End

- Contents similar to Tech Fam in Streamlined Validation process with particular emphasis on CA certification basis and proposed VA certification basis, including analysis of their differences.
- Objective: provide detailed technical information about the project to the VA's team to enable the definition of, and agreement on, the VA's initial type certification basis.
- Meeting(s) may be organised using modern communication means (e.g. teleconference, videoconference), especially in a case where the resources to assemble a technical audience could be economically disproportionate to the scale and complexity of the design being validated.

*Ref. Paragraphs 3.5.5.6 & 3.5.5.7*



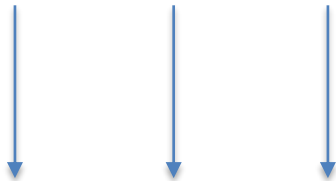
# Technical Validation: Phase 3

## OBJECTIVE

## DETERMINING VA INVOLVEMENT

Beginning

Completion of Phase 2



Initial VIs closed and decisions made regarding initial VI compliance determinations

End

- The level of involvement of the Validating Authority (VA) during validation process is defined in Annex 1 (§4.4.2) and detailed in the TIP §3.5.1
- Based to the maximum extent practicable on the technical evaluations, tests, inspections, and compliance certifications made by the other Technical Agent.
- Special procedures and scrutiny during the first validation of a given product category, as detailed in the TIP Procedures (TIP §3.5.5.9).
- The effective implementation of the validation / acceptance principles will be regularly measured, monitored and reviewed by the COB, using metrics defined in the Technical Implementation Procedures

*Ref. Paragraphs 3.5.5.8, 3.5.5.9 & 3.5.5.10*



# Phase 3 - Level of Involvement of the VA

→ It shall be mainly determined by:

(a) the experience and records of the Competent Authority of the other Party as Certifying Authority



(b) the experience already gained by the VA during previous validation exercises with the Competent Authority of the other Party



(c) the nature of the validated design, the performance and experience of the applicant with the Validating Authority

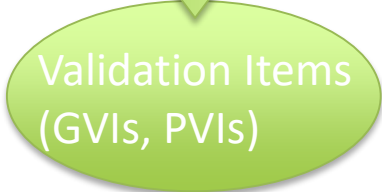


(d) the outcome of initial and continued qualification requirements assessments, defined in paragraph 5.2 of the Annex and TIP §1.7.



# Phase 3 - Level of Involvement of the VA

Technical Familiarisation



Generic VIs  
Project VIs

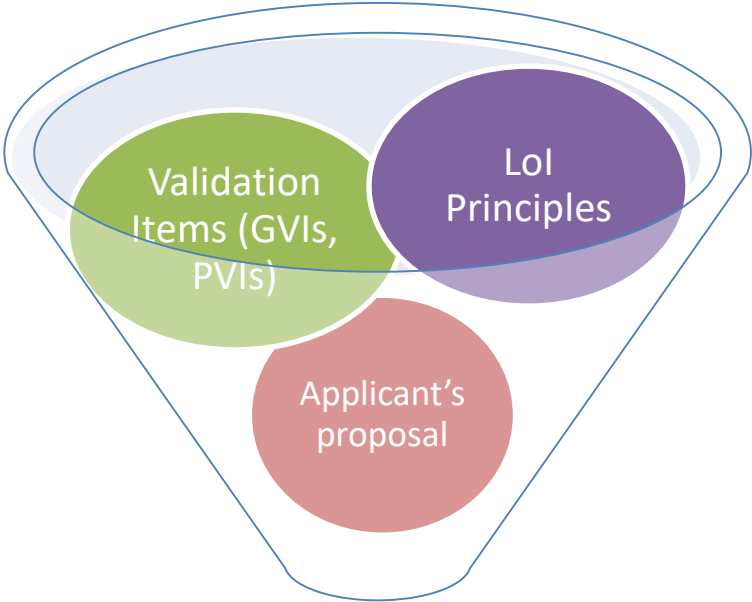
Further involvement limited to VIs



defined and registered in



Validation Work Plan



# Phase 3 - Validation Items

- Validation Items (VIs) identify aspects of the certification basis, design or proposed MoC that warrant VA involvement beyond technical familiarisation
- The basic principle for the validation process is that the VA will not review compliance determinations by the CA, or be involved in an in-depth review of the MoC, except in areas which fall within the scope of identified VIs.
- The VA will establish Generic VIs and Project VIs on the basis of the Lol principles defined in §3.5.1
- The list of VIs is discussed between the VA and the CA and is registered in the validation work plan



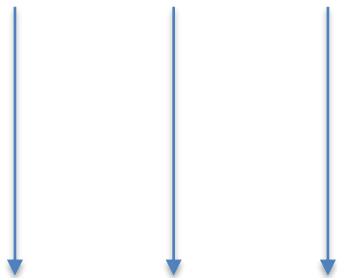
# Technical Validation: Phase 4

## OBJECTIVE

## COMPLIANCE VERIFICATION

Beginning

First Compliance  
determination activities



Issuance of VA TC

End

- During the verification of compliance, the VA should rely on the CA as much as technically justifiable.
- To facilitate this exercise the CA may, in agreement with the applicant, propose to the VA those areas where an in-depth technical involvement of the VA should take place (retained VIs detailed in the validation workplan).
- The CA will make all determinations of compliance on behalf of the VA, except for subjects defined as retained Validation Items.
- For **retained VIs**, the VA shall review compliance demonstration (e.g. plans and reports), giving due consideration to any compliance verification that the CA already made.



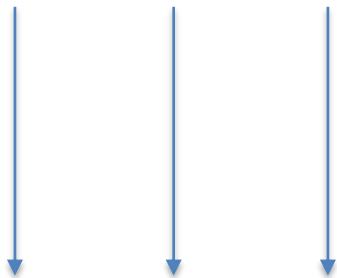
# Technical Validation: Phase 4

## OBJECTIVE

## COMPLIANCE VERIFICATION

Beginning

First Compliance  
determination activities



Issuance of VA Certificate

End

→ The VA shall issue its validated design certificate (e.g. TC for an aircraft, aircraft engine or propeller) when:

- ❖ the CA has issued its own initial certificate;
- ❖ the applicant has demonstrated and declared compliance to the VA's certification basis;
- ❖ the CA has issued a statement of compliance to the VA's certification basis;
- ❖ all issues raised during the validation process conducted by the VA have been resolved; and
- ❖ Administrative fees have been paid by the applicant in accordance with the applicable VA's Fees and Charges regulation.

# CONSIDERATIONS: DATA PACKAGE, APPLICATION TIMELINE

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# DATA PACKAGE

For projects subject to a validation process, an application to the VA through the CA is necessary.

The application package consists of:

- a) Description of the Product
- b) Date of Application to CA
- c) CA Statement of Classification for Validation
- d) Copy of CA's TC and TCDS, TCDSN, STC or CA's Parts and Appliances approval
- e) CA Statement on the compliance with the VA requirements



*Ref. Paragraph 3.5.1.3*



# TIMELINE

- The VA should acknowledge the receipt of the data package within 20 days.
- The validation process starts when the data package is complete and (for CAAC) the related fees are paid
- For administrative validations, the VA will issue its certificate within 15 days when the data package is complete
- For streamlined validations, the VA will issue its certificate within 15 days after completion of the technical familiarisation

# CERTIFICATE APPROVALS: CLASSIFICATIONS OF EU CERTIFICATES



Type Certificates



STC, Significant Major  
Changes



Non-Significant Major  
Changes and Major Repairs



ETSO



Minor Changes and Repairs

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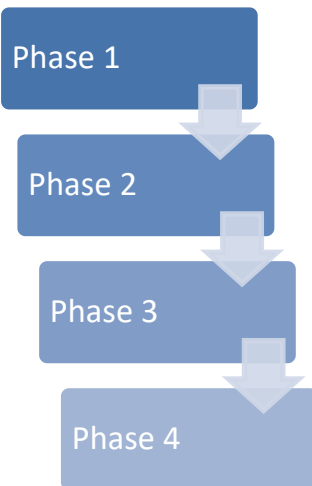


# Type Certificates

→ All TCs are subject to technical validation with VA LOI



Technical Validation





# Significant Major Changes and STC

- All STC or major changes classified as significant by the CA are subject to technical validation with VA LOI, except when TIP Appendix B is applicable and a streamlined validation process is used, limited to technical familiarisation without involvement of the Validating Authority in the showing of compliance activities.



Technical Validation

OR



Streamlined Validation

**TIP Appendix B: conditions for Streamlined Validation Process**

Technical Familiarisation





# Non-Significant Major Changes & Repairs

→ All non significant major changes and repairs are automatically accepted by the VA



Automatic Acceptance



- the VA recognises and accepts the CA's certificates without any technical investigation or validation exercise.
- Certificate of the CA is recognised by the VA as equivalent to its own certificate issued in accordance with its legislation and procedures.
- The VA does not issue its own corresponding certificate



# ETSO and non-significant STC

→ Validation through an administrative process detailed in TIP §3.5.3.



Administrative Validation

**No Technical  
Investigation**





# Minor Changes and Repairs

→ All minor changes and repairs are automatically accepted by the VA



Automatic Acceptance



- the VA recognises and accepts the CA's certificates without any technical investigation or validation exercise.
- Certificate of the CA is recognised by the VA as equivalent to its own certificate issued in accordance with its legislation and procedures.
- The VA does not issue its own corresponding certificate

# **EASA Operational Suitability Data CAAC Aircraft Evaluation Report TIP Appendix C**

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# TIP Appendix C

- Specific Governance for this Appendix (CAAC FSD director, separate signing and publishing)
- Presentation of **EASA OSD and CAAC** Aircraft Evaluation Report elements.
- High level processes for validation of:
  - ❖ CAAC Pilot Qualification Specifications and EASA OSD Flight Crew
  - ❖ Master Minimum Equipment List (with possibility of a single MMEL)
- For other elements, each agent will perform their independent assessment and evaluation, without relying on approvals issued by the other agent. However, concurrent certification or cooperation at project level may still be performed as agreed by CAAC and EASA.

# Export Certificates and Forms

## EASA/CAAC TIP §7

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	<b>7. <u>EXPORT CERTIFICATES AND FORMS</u>.....</b>	<b>57</b>
	7.1. <u>General</u> .....	57
	7.2. <u>Certification for Export</u> .....	57
	7.3. <u>Coordination of Exceptions on Export Certificate of Airworthiness</u> .....	59
	7.4. <u>Additional Requirements for Import</u> .....	59

- Dispositions inspired from other BASAs
- The Importing Party will recognise and accept the export airworthiness approval (Form 27 or Form 1 for EU) when issued in accordance with TIP §7
- §7.4 Additional requirements for Import for EU and China

# §7.2 - Certification for Export



→ For Export of a new aircraft, the Exporting Party will certify that a new aircraft being exported to China or the European Union:

- ❖ Conforms to a type design approved by the Importing Party in accordance with TIP paragraph §3
- ❖ is in a condition for safe operation, including compliance with the applicable airworthiness directives of the Importing Party, as notified by that Party
- ❖ has been subjected to a final operational check by the manufacturer;
- ❖ meets all additional requirements prescribed by the Importing Party, as notified by that Party.

(See §7.4 Additional Requirements for Import)

# §7.2 - Certification for Export



→ Each new aircraft imported to China or the EU will have an Export Certificate of Airworthiness. The ECofA should contain the following statement:

“The *[insert aircraft MODEL]* covered by this certificate conforms to the type design approved under *[insert CAAC or EASA] Type Certificate Number [INSERT TYPE CERTIFICATE NUMBER , REVISION LEVEL and DATE]*, and is found to be in a condition for safe operation,” and/or any other “import requirements” text as specified in the *[insert CAAC or EASA] TCDS*”

→ Any exception where the Exporting Party identifies a non-compliance to the approved type design, the TIP provisions or the notified directives and requirements of the Importing Party shall be identified on the ECofA and coordinated with the Importing Party.

# BASA Implementation Status

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# BASA Management bodies

## → Joint Committee

- Co-chaired by the European Commission and CAAC, is dealing with the Annex(es) of the BASA

## → COB

- Co-chaired by EASA Certification Director and CAAC Director General, Aircraft Airworthiness Certification Department, is dealing with the implementation of Annex 1 of the BASA
- COB first meeting held on 3<sup>rd</sup> September 2020
- approves the TIP
- Established a working group to deal with the on-going validation projects and the termination of existing WA which are superseded by the BASA

# EASA/CAAC TIP - Entry into force



- TIP entered into force upon signature following the first EASA/CAAC COB on 03<sup>rd</sup> September 2020. It will govern new applications made thereafter.
- Upon coming into effect of the TIP, the Technical Agents will take necessary measures to amend or terminate, as appropriate, prior arrangements between them.
- Termination of these arrangements will not affect the validity of the certificates granted by the Authorities or the activities conducted under the terms of these former arrangements.



# EASA/CAAC TIP - Entry into force



- For on-going validation activities on civil aeronautical products initiated by EASA or CAAC under the terms of arrangements to be terminated, which have not yet been completed, the Authorities will finalise the validation in the framework of the TIP and the work done will be appropriately credited.
- Agreed way forward for EU ongoing projects initiated before TIP entry into force:
  - ❖ For past applications not accepted by CAAC: new EASA forward letter indicating new process under TIP framework
  - ❖ For past applications accepted but not started (no CAAC validation team yet set up): revised EASA forward letter indicating new process under TIP framework
  - ❖ If validation work already started: where applicable, transition proposal from EASA to CAAC (reach consensus to transition in a smooth and concerted manner).