



EASA
European Aviation Safety Agency

Data-Package for STC

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STC Workshop – Data Package for STC

➤ Content of the presentation

- Supplemental Type Certificate
- Some questions
- Application (ref 21.A.113)
- Showing of Compliance (ref 21.A.114)
- Certification Programme (ref 21.A.114/.20(b))
- Compliance Documentation (ref 21.A.20(c))
- Final Statement (ref 21.A.20(d))
- Summary of the expected Data Package

Intention of this presentation : Data Package for EASA approval of STC

Out of the scope : Major change of STC or Certification Support for Validation (CSV) of EASA STC

In general, similar & equivalent considerations



STC Workshop – Data Package for STC

➤ Content of the presentation

- Supplemental Type Certificate → Reminder of what an STC is
- Some questions → Self reflection
- Application (ref 21.A.113) → How we know about the STC project
- Showing of Compliance (ref 21.A.114) → Links to the Certification Programme
- Certification Programme (ref 21.A.114/.20(b)) → Main information expected
- Compliance Documentation (ref 21.A.20(c)) → Definition and Meaning
- Final Statement (ref 21.A.20(d)) → Expected applicant declaration
- Summary of the expected Data Package → Conclusion and feedback

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➤ Supplemental Type Certificate (STC)

- It is the approval of a Major Change* to a product, proposed by a person (organisation) other than the type-certificate holder of the product :
 - *Major Change : Change to a type-certificate classified as Major
 - Type Design/Type Design Changes : Approved Pre-configuration/Pre-Mod
→ EASA Approved product flying
 - Demonstration of capabilities to do that kind of changes (21.A.112B & 21 Subpart J – DOA / AP DOA when applicable)
 - Any applicant for a STC shall comply with point 21.A.97
 - 21.A.97 – Major Changes : any necessary data for inclusion in the type design
→ Installation / Integration in aircraft → Post configuration/Post-Mod
→ EASA Approved product flying



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➤ Some questions - Self-reflection

Some questions that you can raise yourself before submittal of an application or launching a project

- What is the objective of the STC ? (design change-general, summary)
- What are the basis (to the project, Pre-Mod configuration, certification basis) ?
- What is the result ? (detailed-description: understand & establish the affected regulations)
- What we need for STC Certification ?
- What is the key Certification data ?
- What is the certification approach (i.e. use of ETSO, proposed MOCs/ESF/SC, Pre-cond, ...)?
- What is the additional data required ?
- What other designs are required to be embodied on the product ?
(Piling of modification)
- What is the plan ?
- What are the next steps ?
- How would I see / do it, being in place of the Authority ? ...



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- What is the objective of the STC ? (design change-general)
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- What is the key Certification data ?
- What is the certification approach ?
- What is the additional data required ?
- What safety designs are required to be embodied on the product ?
(Proof of modification)
- What is the plan ?
- What are the next steps ?
- How would I see to do it, being in place of the Authority ? ...

Hint :
➔ Inclusion in the Certification Plan
To Lead Your Project*

***from the beginning : as soon as possible with the application**



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➤ Application (ref 21.A.113) :

- Shall be made in a form and manner established by the Agency
 - EASA Portal :
 - Privileged Way for practical reasons in the treatment
 - EASA Form [FO.CERT.00033](#) *To be filled via EASA Web Site*, Application for STC
- An application for a STC shall include the descriptions & identification, and changes to the OSD required by 21.A.93 (Application to Changes to TC). In addition, such an application shall include a justification that the information on which those identifications are based is adequate either from the applicant's own resources, or through an arrangement with the type-certificate holder



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- **Showing of Compliance** (ref 21.A.114)
- Any Applicant shall Comply with **Major Changes** (21.A.97) :
 - **Compliance Demonstration process** for Major Change (AMC 21.A.97)
 - . Use of a Certification Programme
- **Compliance Demonstration process** for STC (AMC 21.A.114)
 - Use of AMC/GM 21.A.20 (Compliance to Type Certification Basis – **Type Certificate**)
 - . 21.A.20 refer to the use of a Certification Programme
 - Use of a Certification Programme
- Showing Compliance for STC lead directly or indirectly to the use of a **Certification Programme**

STC (21.A.114) → Major Changes (21.A.97) → TC (21.A.20) → **Certification Programme**



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➤ Certification Programme (ref 21.A.114) : should include

- Purpose of the Change : What is the intention ?, What is the pre-configuration ?, ...
- Description of the Change : How this change impact the regulations, from TC or new ones required ?
- Applicability : On which product ? (Product Type, List of Product Model, in some cases MSN)
- Certification Basis : Applicable *and proposed* certification specifications, special conditions, equivalent safety findings and environmental protection requirements (*as per Type Certification Basis, or elect to comply to a later regulation*)
- Description on how compliance will be demonstrated, with the means of compliance (next slide), and reference to compliance documents, *and including any selected guidance material*
- The involvement of the TC holder, as appropriated
- The delivery schedule of compliance documents
Useful Example : Documents deliveries in terms of *Type of Compliance* (see next slide)



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- Certification Programme (ref 21.A.114) : should include
- Means of Compliance Codes (ref 21.A.20(b))

Type of Compliance	Means of Compliance	Associated Documents	Compliance
Engineering evaluation	MC0 : - Compliance statement - Reference to Type Design documents - Election of methods, factors - Definitions	(1) Type Design documents (2) Recorded statements	
	MC1: Design review	(3) Descriptions (4) Drawings	
	MC2: Calculation/ Analysis	• Substantiation reports	
	MC3: Safety assessment	(5) Safety analysis	
Tests	MC4: Laboratory tests	a) Test programmes b) Test reports c) Test interpretations	
	MC5: Ground tests on related product		
	MC6: Flight tests		
	MC8: Simulation		
Inspection	MC7: Design inspection/ audit	d) Inspection or audit reports	
Equipment qualification	MC9: Equipment qualification	Note : Equipment qualification is a process which may include all previous means of compliance.	



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➤ Certification Programme (ref 21.A.20(b)) : should include

- A compliance checklist addressing each (affected) paragraphs of the type CB, the OSD CB and environmental protection requirements, with reference to the means of compliance & to the related compliance documents, *and associated elect to comply to latest regulations.*
- Identification of relevant personnel making decisions affecting the regulations
- A project schedule including major Milestones

Useful Example :

Key milestones, in terms of *Type of Compliance, or/and* potential EASA involvement
(incl. tests, Cabin inspection, last document to be provided to EASA, ...)



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➤ Certification Programme : should also include

➤ Any other useful information

- From the application, for the Approval/Certificate, for record/traceability/history ...
Affected EASA panels/domains, AD's evaluation, ...
- Reference to Key & approved Manuals and Master Documents (supplement) :
AFM, ICA/ALS (incl. maintenance/repair manual supplements), Weight & Balance
MDL (Master Data List / Master Drawing List (approval & definition)),
Certification Summary (accordingly) ...
- Any particular limitation foreseen
- Any other approved modification which need to be embodied before,
or after (to remove any particular limitation foreseen)
- Expected date for STC issue, product delivery date, product in operation (with passengers)
- Clarity

NB : Certification Programme shall be kept up-to-date (21.A.20(b)) : i.e. Final Certification Programme or Certification Summary



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➤ Compliance Documentation

- A compliance document is the end result of a certification process, where the demonstration of compliance is recorded. For each specific certification process, the Agency is involved in the process itself at an early stage, especially through the establishment of the certification programme. The inspections or tests under 21.A.257(b) may be performed at various stages of the whole certification process, not necessarily when the compliance document is presented.



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➤ Compliance Documentation (21.A.20(c)) :

- Reports, drawings, specifications, calculations, analysis etc.
- Provides a record of the means by which compliance with the certification basis
- Each compliance document should normally contain:
 - an adequate link with the corresponding certification programme
 - the reference of the certification specifications, special conditions or environmental protection requirements addressed by the document
 - data demonstrating compliance
 - a statement by the applicant declaring that the document provides the proof of compliance for which it has been created
 - the appropriate authorised signature
- Each compliance document should have a number and issue date. The various issues of a document should be controlled



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➤ Final Statement of Compliance (21.A.20(d)) :

- The applicant shall declare that it has demonstrated compliance with the certification basis and environmental protection requirements, according to the certification programme.
- Where the applicant holds an appropriate design organisation approval, the declaration shall be made according to the associated procedures (21 Subpart J – DOA)



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➤ Data package for STC Approval

- Application (21.A.113)
- Certification Programme (21.A.114, 21.A.20(b))
- Compliance Documentation (21.A.20(c))
- Final Statement (21.A.20(d))
- Some Hints :
 - Lead : It is to the applicant to lead the project, and help us to help you / to lead
 - Common sense, pragmatic, anticipation to reach targets, continuous communication/discussions along the project, clarity
 - Self-reflection items : Imagine being in the Authority side, you have the capabilities, etc.
 - Inform all the Team : global & solving/closing items at the lowest level as possible (Expert/PCM)
 - Send at sooner stage : Master Data, Key Data (Key Means Of Compliance),
Manuals to Approve, propose & ask feedback to PCM/Specialists



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Thanks for your attention

End slide

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