



EASA STC Workshop 2018

LHT implementation of LOI as part of the cabin completion project Cinderella



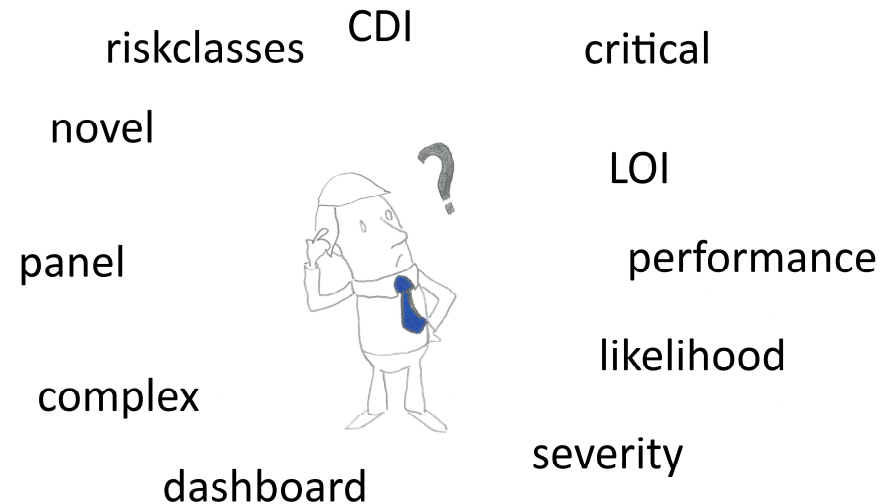
Lufthansa Technik

Agenda

- **Where did we start**
- How the CDIs were defined
- How the proposed LOI is documented
- How did we find an agreement with EASA specialists and their LOI

- There was an existing documentation concept including:
 - 21J design documentation (e.g. Description of Change (DoC))
 - 145 maintenance documentation (e.g. installation drawings, installation instructions)
 - 21G production documentation (e.g. production drawings, accomplishment instructions)
 - Certification documents (e.g. Compliance Check List (CCL))
 - etc.

Confusion



- What is that all about?
- How can we implement LOI without having effects on the existing documentation?
- How can we document LOI to have a basis for discussions with the EASA specialist?

Agenda

- Where did we start
- **How the CDIs were defined**
- How the proposed LOI is documented
- How an agreement with EASA specialists on their LOI was found

How the CDIs were defined

Description of Change (DoC)		Lufthansa Technik Design Organisation	
Document Number	AVN11-21	Revision	0
Date	15 Mar 2017		
See proprietary note on first page!			
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- All the Descriptions of Change have the same document structure.
- When looking at chapter 3.1 and 3.2 a high level description of the modifications that shall be performed is given while chapter 3.3 provides more details.
- The decision was to define each modification as described in the sub-chapters of 3.1 and 3.2 as a Compliance Demonstration Item (CDI) and the titles of these sub-chapters are used as the title for the CDI.



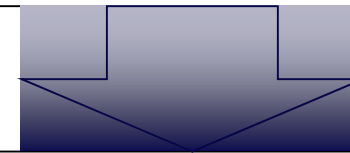
Advantages

- The existing design documentation does not need to be changed.
- Design Engineering departments need not to be involved in the LOI topic.
- The titles of the afore mentioned sub-chapters of 3.1 and 3.2 were already used within the Compliance Check List to identify the components / modifications.



Disadvantages

- The subject project consists of 27 individual Descriptions of Change (DoCs).
- Even if each DoC would only contains 3 modifications within chapter 3.1 and 3.2 it would result in 81 CDIs.



- The number of CDIs does not matter as long as we can find a way to document the CDIs and offer a filter functionality for each EASA panel / specialist.

Agenda

- Where did we start
- How the CDIs were defined
- **How the proposed LOI is documented**
- How an agreement with EASA specialists on their LOI was found

How the proposed LOI is documented

- LHT has decided to generate a new document titled “Level Of Involvement Table (LOIT)” which is exclusively handled by the Office of Airworthiness.
- The LOIT is Excel based and therefore offers filter and sorting functionalities which simplifies working with the table.
- The LOIT contains information about the design (e.g. DoC, CDI), the CDI related EASA panel, the information about the classification of each CDI, the proposed LOI and remarks which allow us to give additional information about the classification or document additional information resulting from the LOI discussion.
- The LOIT uses the same titles for the CDIs as the DoCs do and which are also used in the Compliance Check List (CCL).
- The CDI numbers and the LOI-Numbers are transferred to the CCL.

LHT implementation of LOI - How the proposed LOI is documented

Description of Change (DoC)



Document Number AVN10-53
Revision 0
Date 17 Mar 2017
Aircraft or Engine Type A320
Lead ATA Chapter 53-00

Proprietary information
Any use of the following information being confidential and proprietary to Lufthansa Technik AG is prohibited unless approved in writing.

Title
Structure Modification

Description of Change (DoC)

Document Number AVN10-53
Date 17 Mar 2017
Revision 0



See proprietary note on first page!

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Lufthansa Technik											Doc-No.: LCIT00-17101M		Issue 02 2017		
Level of Involvement Table (LOIT)															
Lufthansa Technik identification of Compliance Demonstration Items											Identification and Risk Classification				LHTproposal for LOI
Des. Doc.	Component / System	Discipline	CDI No.	EASA Panel	DO Performance unknown / low / medium / high	novel or complex topic? no novel / novel no complex / complex		Likelihood of unidentified non- compliance	Severity non-critical / critical	Risk classes	Reason for classification / Remarks		LOI No.: (ref. to CP for more details)		
AVN10-53	Floor Structure Modification	structure	03-02	3	high	no novel	no complex	very low	non-critical	class 1					
AVN10-53	Base Plate Installation	structure	03-03	3	high	no novel	no complex	very low	non-critical	class 1					
AVN10-53	Floor Panel Modification	structure	03-04	3	high	no novel	no complex	very low	non-critical	class 1					
AVN10-53	Upper Attachment Installation	structure	03-05	3	high	no novel	no complex	very low	non-critical	class 1					
AVN10-53	Side Attachment Installation	structure	03-06	3	high	novel	no complex	low	non-critical	class 1	new design for side attachments; requirements unchanged, loads well known				
AVN10-53	ERI Support Structure	structure	03-07	3	high	no novel	no complex	very low	non-critical	class 1					
AVN10-53	Lining/Ceiling Structure	structure	03-08	3	high	no novel	no complex	very low	non-critical	class 1					
AVN10-53	Door Locking	structure	03-09	3	high	no novel	no complex	very low	non-critical	class 1					
AVN10-53	Cargo Ladder	structure	03-10	3	high	novel	no complex	low	non-critical	class 1					
AVN10-53	Window Plugs	structure	03-11	3	high	no novel	no complex	very low	non-critical	class 1	new design for cargo ladder installation, requirements unchanged, loads well known Installation according AMM				

Lufthansa Technik									
Doc. No. CP00-17/19M									
Iss./Rev.: 999 / 999									
DRAFT									
Certification Program									
A321-200 - Cabin Completion									
Certification Requirement		Regulatory Differences *)		Title		Means of Compliance			
Paragraph	Chg./Amdt.	Paragraph	Chg./Amdt.			0	1	2	3
JAR 25.0301(a)	11			Loads				2	
JAR 25.0301(a)	11			Loads				2	
JAR 25.0301(a)	11			Loads				2	
JAR 25.0301(a)	11			Loads				2	
JAR 25.0301(a)	11			Loads				2	
JAR 25.0301(a)	11			Loads				2	
JAR 25.0301(a)	11			Loads				2	
JAR 25.0301(a)	11			Loads				2	
JAR 25.0301(a)	11			Loads				2	
JAR 25.0301(b)	11			Loads				2	

Note: LHT has recently changed the title of the above shown document extract from Certification Program (CP) to Compliance Check List (CCL). As the subject project was started in the beginning of 2017 it is still titled Certification Program (CP). For the shown content, the changed title has no effect.

LHT implementation of LOI - How the proposed LOI is documented

 Lufthansa Technik				Doc.-No.: LOIT00-17/01M				Issue 02 .2017							
Level of Involvement Table (LOIT)															
Lufthansa Technik identification of Compliance Demonstration Items				Identification and Risk Classification										LHTproposal for LOI	
Des. Doc.	Component / System	Discipline	CDI No.:	EASA Panel	DO Performance	novel or complex topic?		Likelihood of unidentified non-compliance	Severity non-critical / critical	Risk classes	Reason for classification / Remarks	LOI No.: (ref. to CP for more details)		Revision	
					unknown / low / medium / high	no novel / novel	no complex / complex								
AVN10-53	Floor Structure Modification	structure	03-02	3	high	no novel	no complex	very low	non-critical	class 1					
AVN10-53	Base Plate installation	structure	03-03	3	high	no novel	no complex	very low	non-critical	class 1					
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AVN10-53	Upper Attachment Installation	structure	03-05	3	high	no novel	no complex	very low	non-critical	class 1					
AVN10-53	Side Attachment Installation	structure	03-06	3	high	novel	no complex	low	non-critical	class 1	new design for side attachments; requirements unchanged, loads well known				
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AVN10-53	Cargo Ladder	structure	03-10	3	high	novel	no complex	low	non-critical	class 1	new design for cargo ladder installation, requirements unchanged, loads well known Installation according AMM				
AVN10-53	Window Plugs	structure	03-11	3	high	no novel	no complex	very low	non-critical	class 1					

Identification of Risk classes
according EASA CM

EASA panel number

CDI number

LHT internal Discipline Identification

Main sub-chapters of „Extend of Change“

Number of Description of Change

Reason for the classification and
Remarks

LHT proposal for LOI in terms of a LOI
number

Agenda

- Where did we start
- How the CDIs were defined
- How the proposed LOI is documented
- **How an agreement with EASA specialists on their LOI was found**

How an agreement with EASA specialists on their LOI was found

- LHT had a meeting / telephone-conference with each EASA panel / specialist to discuss the LOI concept and to explain in detail how the Description of Change (DoC), the Compliance Check List (CCL) and the Level Of Involvement Table (LOIT) interact.
- The proposed LOIs were discussed and agreed or were discussed and waived by EASA specialist.
- Some additional LOIs were defined during those discussions and some documents were requested for information only.
- Form LHT point of view the LOI discussions with the EASA specialist were very harmonic and expedient.

Vielen Dank für Ihre Aufmerksamkeit.
Thank you for your attention.

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