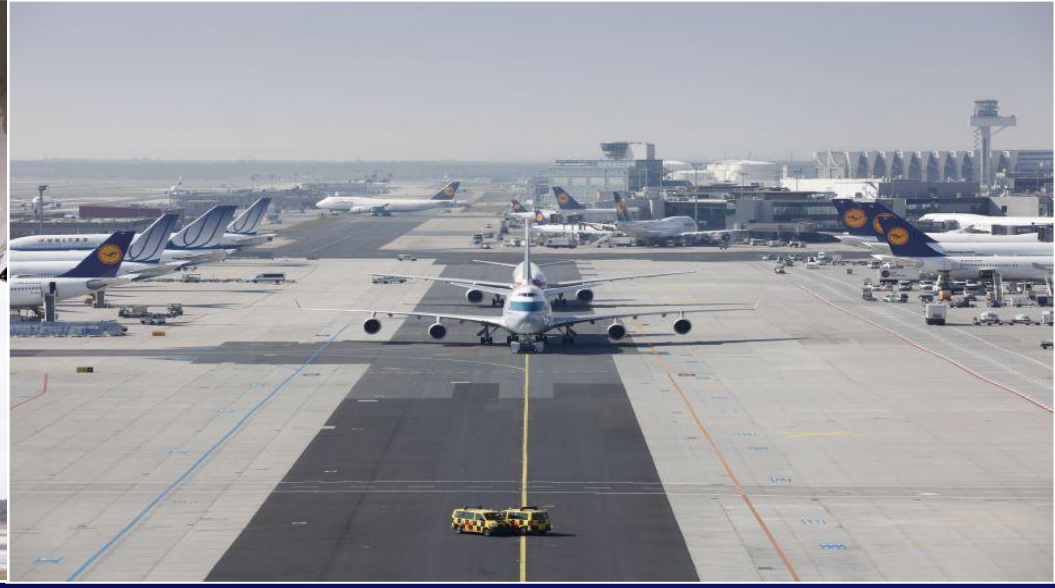


AD Evaluation Process

Best Practice

CGN, 02/03. December 2014

Lufthansa Technik

Intro – Lufthansa Technik Background

- LHT is providing all kinds of services:
  - EASA Part 145 MRO (base + line maintenance),
  - Engine / Landing Gear / Component Shops and Material Pooling,
  - EASA Part 21J and Part 21G Approval,
  - **SCAMT** (Subcontracted Continuous Airworthiness Management Tasks).

- At LHT, SCAMT Engineering Services are provided for various Fleets and Customers.

	A320f	737	A310	A330	A340	767	747	777	MD11	A380
DLH	152	21	0	19	42	0	34	0	0	12
ext. Customers	130	45	0	9	0	0	0	13	19	0
VIP-Customers	10	4	1	1	8	1	8	0	0	0
	292	70	**1**	**29**	**50**	1	42	13	19	12

529

- SCAMT Services are covered by the LHT Engineering Department
  - Engineering for Scheduled Maintenance
  - Engineering for Supplemental Maintenance
    - Assesment and Recommendations for Service Bulletin
    - **Assesment and „Management“ of AD Requirements**

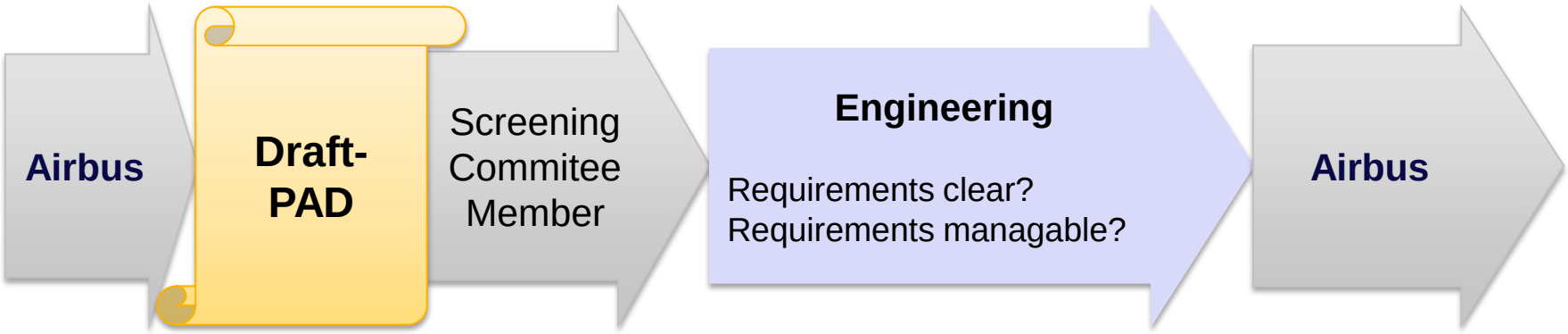
➔ Both cooperate and coordinate closely.

Draft Proposal to issue an AD (Draft-PAD)

- DLH is Member of the Screening Commitee.

- DLH forwards Draft-PADs to LHT for evaluation / commenting
  (Airbus often requires feedback within only 1-2 days.)

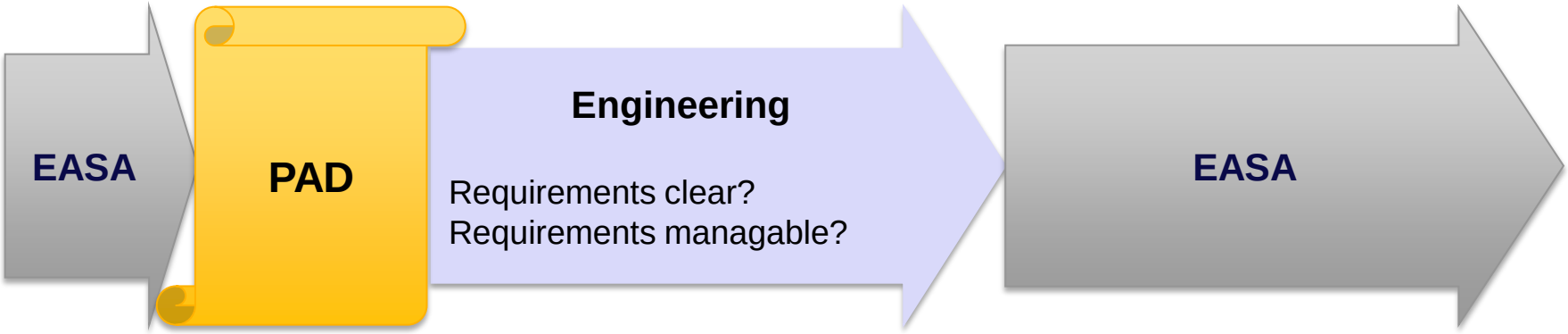
- LHT engineering department reviews draft-PAD and comments as necessary:
  - Are the requirements **unambiguous**?
  - Is the **timeframe realistic** for LHT customer fleets (layovers, spares, tools, etc.)?
  - In extreme cases, action is prepared/started.



Proposal to issue an Airworthiness Directive (PAD)

- DLH and LHT get PADs from EASA homepage.

- LHT engineering department reviews PADs concerning:
  - Differences to draft-PAD? Requirements still clear / clearer now?
  - Requirements manageable?
    - Full fleet status is usually evaluated to reveal conflicts.
    - Affected departments may be alerted (materials, planning, tooling).
    - In urgent cases, action is already started.
  - Comments on the PAD are provided within the timeframe specified in the PAD (usually 4 weeks)

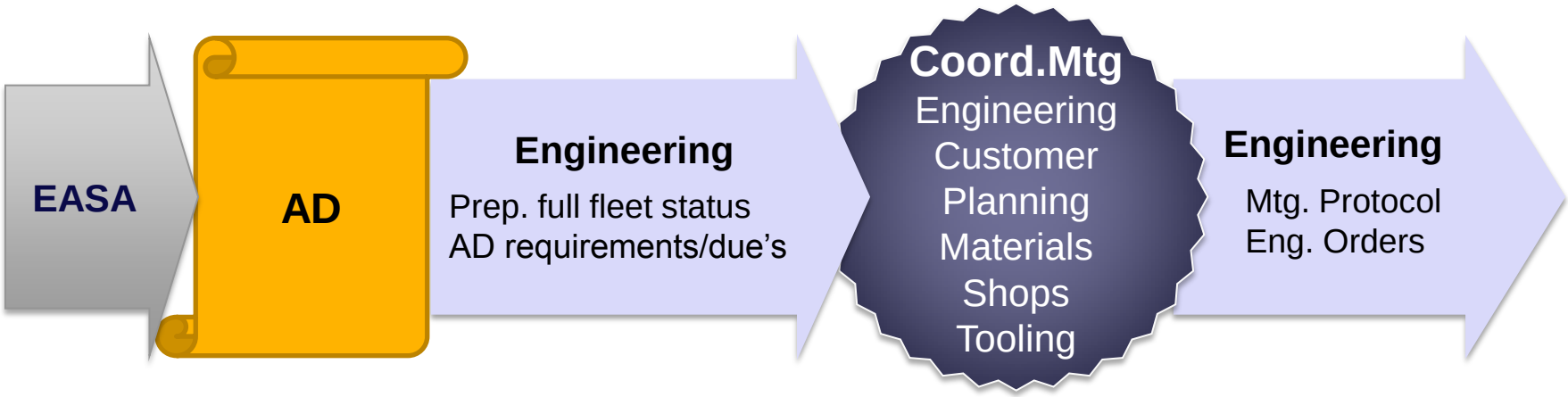


Airworthiness Directive (AD)

- DLH and LHT review EASA homepage for ADs daily.

- LHT engineering department reviews ADs concerning:
  - Differences to PAD? Requirements still clear / clearer now (requests to EASA).

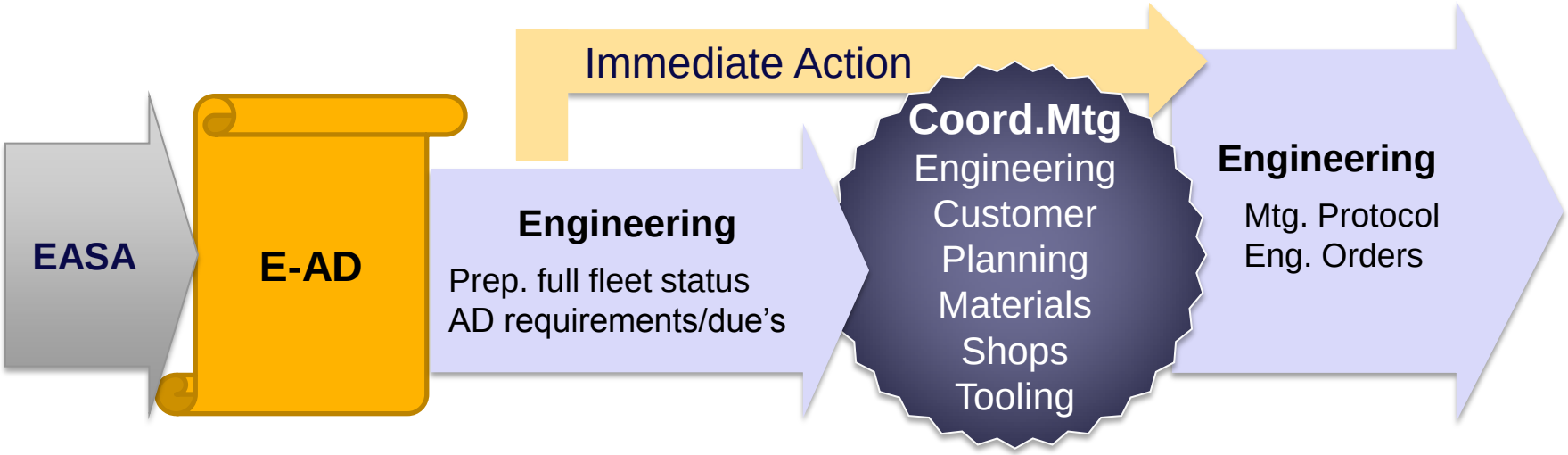
- LHT engineering calculates fleet status for Coordination Meeting with:
  - **Customer**: A/C-availability, Costs, AD-interpretation, AMOCs
  - **Planning**: Scheduled/extra Layovers, Special Requirements (Jacking, NDT, etc)
  - **Material/Pool/Shop**: Turn-Around Times, Spares, Stock, Lead-Times
  - **Tooling**: Purchase, lend, built, schedule Special Tooling



Emergency Airworthiness Directive (E-AD)

- DLH and LHT subscribed to the EASA notification service for Mandatory Continuing Airworthiness Information (MCAI).
  - Publications during normal office hours are handled by the responsible Engineering Specialist.
  - Outside Office Hours, the Customers‘ Technical Managers can reach LHT „on call“ personal who will, take action and contact further spacialists as required.

- The general process for ADs and E-ADs is identical, but
  - Engineering may need to start immediate Action before a Coordination Meeting can occur.
  - After a later Coordination Meeting, further Action may follow.



Airworthiness Directive (AD) – Example

- AD 2012-0053:
  - Repetitive Inspection of the MLG and CLG Bogie Pivot Pin
  - Repair upon Findings

Effective Date:	13 April 2012
Required Action(s) and Compliance Time(s):	Required as indicated, unless already accomplished: (1) Initially within the threshold indicated in Table 1 of this AD and, thereafter, at intervals not to exceed 26 months, accomplish a detailed visual inspection of the bogie pivot pins on the MLG and CLG (for A340 aeroplanes only) and pivot pin bushes in accordance with the instructions of Airbus Service Bulletin (SB) A330-32-3240 Revision 02 or Airbus SB A340-32-4281 Revision 01 or Airbus SB A340-32-5096 Revision 01, as applicable to aeroplane model.

Table 1 – Initial Inspection

Bogie pivot pin condition	Compliance time
Bogie pivot pin fitted on MLG installed on A330, A340-200 and A340-300 **not having** embodied: - Airbus modification 54500 in production or, - Airbus SB A330-32-3212 in service or, - Airbus SB A340-32-4256 in service.	Within 26 months after 22 March 2011 [the effective date of EASA AD 2011-0040] or since the aeroplane first flight,

- Fleet Status:
  - All A330 and A340 affected
  - Most already inspected by previous SB-Revisions
  - Findings at Pivot Pins known problem from Overhaul Reports and previous Accomplishments

- Action:
  - Evaluation of optimum schedule considering existing layovers (C-Checks,Gear Changes)
  - Communication for Planning Department for Special Groundtimes where required.
  - Info of Materials Department to expect rise in Spares Demand
    → Result: Purchase of extra Spares and Stocking in reserved Shelf.
  - Publication of Engineering Order for Inspection (including reporting instruction)
  - Publication of Engineering Order for Repair (including details on possible spares)

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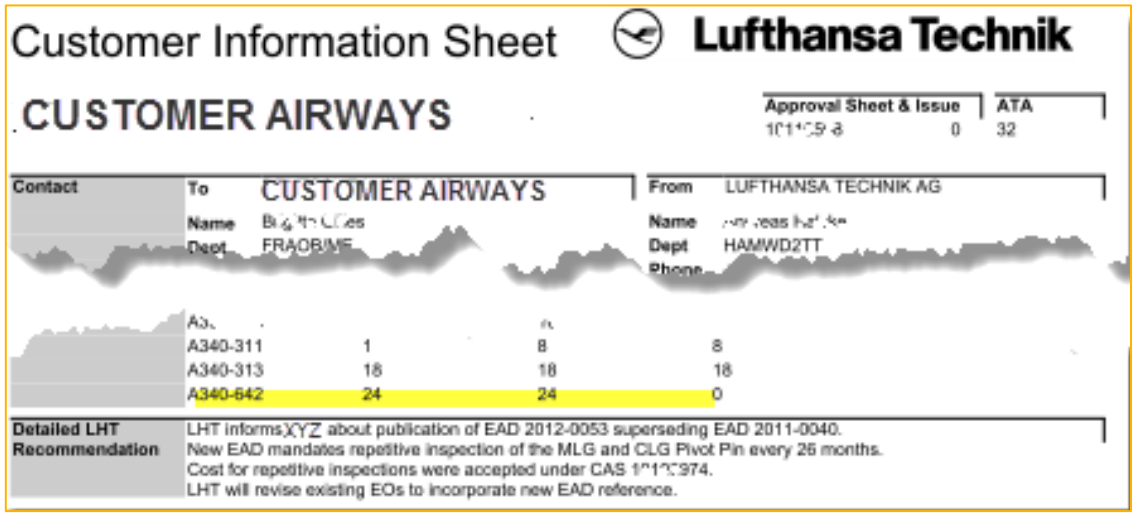
  - Publication of Engineering Order for Repair (including details on possible spares)

Airworthiness Directive (AD) – Example

- Set-up in the Documentation System:
  - Decision for Action for every Task on every A/C
  - Generation of Engineering Orders per Customer Fleet (see screenshot excerpt)

Documents	DB for Customer	Approval Sheet	Maintenance Task
EAD: 2012-0053: /1	DLH	1011050[illegible] : REL	REP-100[illegible](EO 3[illegible])
SB: A340-32-4281: 01/1		(Acknowledged)	IM-101[illegible](EO 3[illegible])

- Approval Sheet for each Customer
  - General Info about Document, affected fleet size, costs etc.
  - Detailed Recommendation (see screenshot excerpt)



Customer Information Sheet — Lufthansa Technik

CUSTOMER AIRWAYS

Approval Sheet & Issue		ATA
101[illegible]8	0	32

Contact			
To	CUSTOMER AIRWAYS	From	LUFTHANSA TECHNIK AG
Name	[illegible]	Name	[illegible]
Dept	FRAOBMS	Dept	HAMWD2TT
		Phone	

A/C			
A340-311	1	8	8
A340-313	18	18	18
A340-642	24	24	0

Detailed LHT Recommendation	
	LHT informs XYZ about publication of EAD 2012-0053 superseding EAD 2011-0040. New EAD mandates repetitive inspection of the MLG and CLG Pivot Pin every 26 months. Cost for repetitive inspections were accepted under CAS 1[illegible]974. LHT will revise existing EOs to incorporate new EAD reference.

Airworthiness Directive (AD) – Example

- Set-Up of JobTracking System
  - Set-Up of Due-Dates and Intervals per Task and A/C (no picture)

- Tracking of Accomplishments and Due-Dates
  - Accomplishment Records entered in the System
  - Next Due-Dates calculated from that
  - Info available per „online Report“ (see screenshot excerpt)
  - Info also used for Airworthiness Review and official Reports

DOCUMENT	TITLE	REFERENCES / REMARKS	TASK TYPE	METHOD OF COMPLIANCE	AC-REG	PERIODICITY	COMPLETION DATE	NEXT DUE
EAD 2012-0053	LANDING GEAR - MAIN AND CENTER LANDING GEAR BOGIE PIVOT PINS - INSPECTIONS	AD 2013-07-03 EAD 2011-0040 LTA D-2011-077/01 SB A340-32-4281/01 (OR HIGHER) SB A340-32-5096/01 (OR HIGHER)	REP - REPAIR / 02-REP	EO 3[illegible] REP. / ONLY IN CASE OF FINDINGS DURING EO 334468 INSP. (M)	D-Alxx			
			IM - INSPECTION MULTIPLE / 01-IM	EO 334468 INSP. (M)	D-Alxx	THRESHOLD REFER TO WORKPAGES INTERVAL 26 MTH	11-APR-2013 59877 FH 8740 FC	11-JUN-2015
			REP - REPAIR / 02-REP	EO 3[illegible] REP. / ONLY IN CASE OF FINDINGS DURING EO 334468 INSP. (M)	D-Alyy			
			IM - INSPECTION MULTIPLE / 01-IM	EO 334468 INSP. (M)	D-Alyy	THRESHOLD REFER TO WORKPAGES INTERVAL 26 MTH	17-NOV-2014 64866 FH 9298 FC	17-JAN-2017

Safety Information Bulltin (SIB)

- Only some customers have contracted SIB evaluation to LHT.
- SIBs are treated similar to Service Bulletins within LHT.
- SIBs are reviewed by LHT Engineering and Action is taken as appropriate.
  - For each customer a technical summary of each SIB intend and the implications for that customer areprovided.
  - As necessary, recommendation for customer documentation or procedures are specified.
  - As necessary the Material Pool is warned and/or the fleet is examined for unapproved parts.

Vielen Dank für Ihre Aufmerksamkeit.

Thank you for your attention.

Lufthansa Technik

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