

Data Link Recording Rule

Rule Language & Means of Compliance

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Federal Aviation
Administration



Overview

- **Rule Content**
- **Means of Compliance**
- **Frequently Asked Questions**
- **Discussion**



Rule Content

- **Affects Parts 91, 121, 129, 135**
 - Example
 - §91.609(j) - *All airplanes or rotorcraft required by this section to have a cockpit voice recorder and a flight data recorder, that install datalink communication equipment on or after April 7, 2010, must record all datalink messages as required by the certification rule applicable to the aircraft.*
- **Captures new aircraft production, as well as new data link installation on legacy aircraft**



Rule Content

- **Affects Parts 23, 25, 27, 29**
 - Example
 - §23.1457(a)(6) - *If datalink communication equipment is installed, all datalink communications, using an approved data message set. Datalink messages must be recorded as the output signal from the communications unit that translates the signal into usable data.*
- **“Approved data message set” is defined during data link system certification.**
- **Advisory Material has been released to provide guidance for compliance.**



Means of Compliance

- ***AC 20-160 Data Link Recording in Onboard Crash Survivable Memory***
- ***References EUROCAE ED-93 MASPS for CNS/ATM Message Recording Systems***
- **Recorded information (direct or deduced)**
 - Content - Complete msg or msg ID + variable(s)
 - Priority – Display or transmission priority levels
 - Queues – Msgs received, msgs generated but not sent
 - Status – Received, displayed, saved, recalled
 - Timing

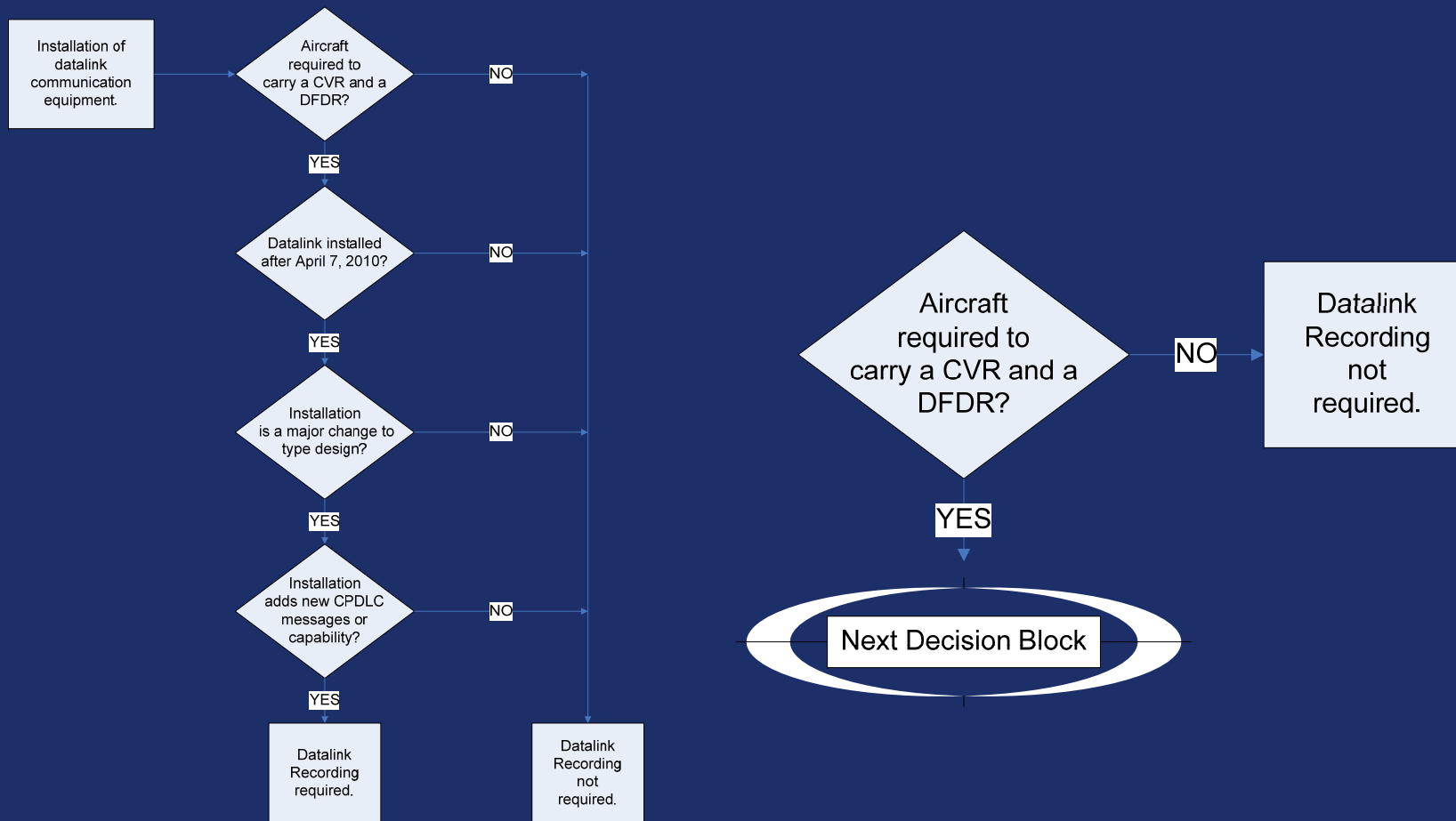


Data Link Messages to be Recorded

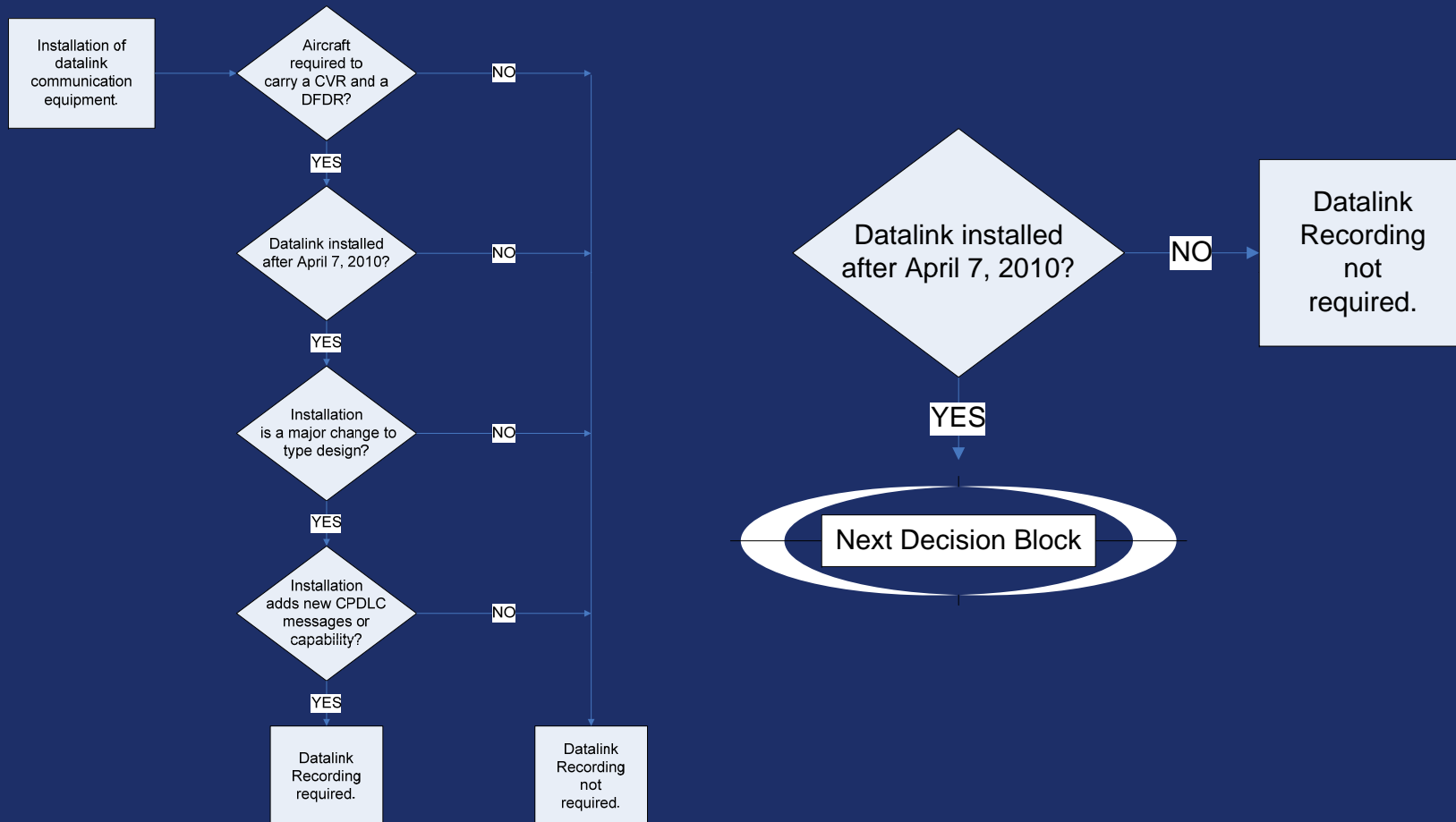
- **AC 20-160 requires recording of Controller Pilot Data Link Communication (CPDLC), defined as...**
 - ICAO Doc 4444 *Procedures for Air Navigation Services – Air Traffic Management (PANS/ATM)*
 - App. 5 *Controller Pilot Data Link Communication (CPDLC) Message Set*
 - *ATN CPDLC*
 - *FANS CPDLC*



Rule Making Decision Diagram



Rule Making Decision Diagram

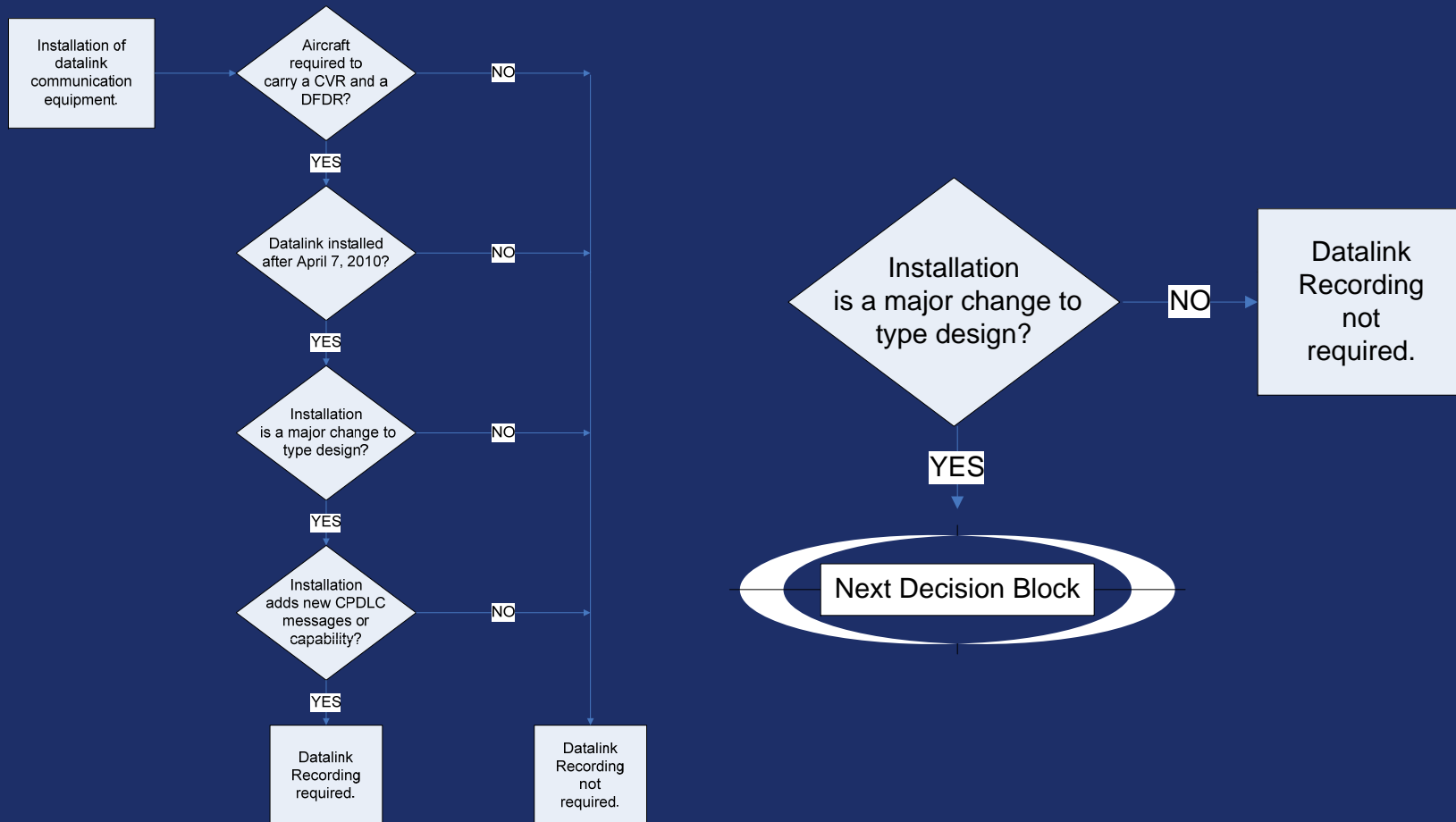


Decision – Installation Date

- **What do we mean when we say “if data link comm equipment is installed on or after April 7, 2010”?**
 - Existing Aircraft - The date of installation is the date the aircraft is returned to service.
 - Newly manufactured aircraft - The date of manufacture (date the aircraft is issued an individual certificate of airworthiness).



Rule Making Decision Diagram

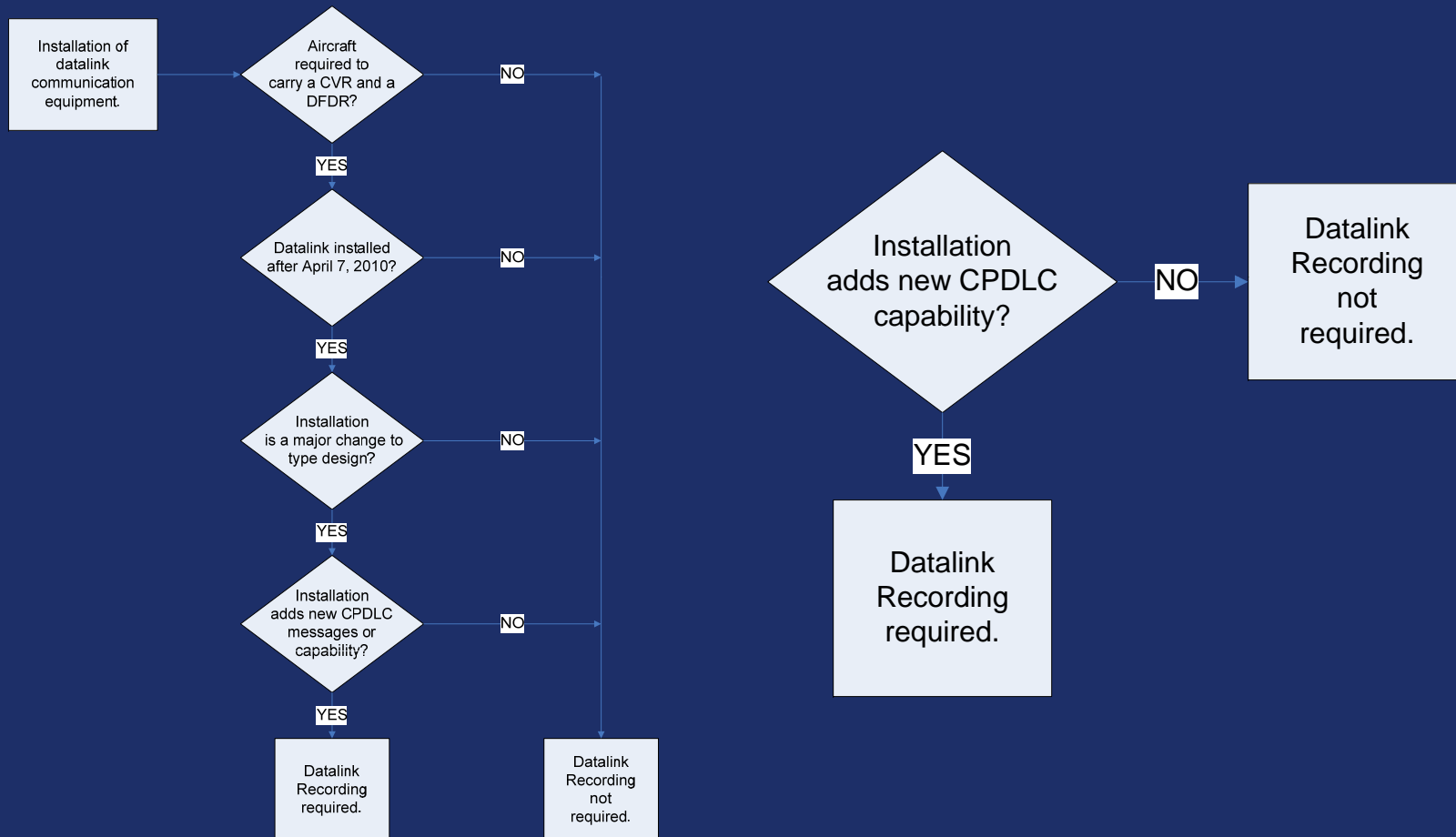


Decision – Major Change to Type Design

- Alterations requiring an STC.
- Service bulletins that are considered a major change.
- Examples of major changes:
 - Installation of FANS or ATN CPDLC.
 - Installation of INMARSAT SATCOM System that provides CPDLC Services
- Example of a minor change:
 - Installation of AOC/AAC data link messages in modifiable portion of CMU/ATSU
 - All provisions for CPDLC have been installed on the aircraft, but are functionally inactive. The service bulletin only provides for software activation.



Rule Making Decision Diagram



Decision – Adds new CPDLC Capability

- **Alterations that are a major change to type design and either adds new CPDLC or changes existing CPDLC functional capability would enact the recording requirement.**
 - Installation of a SATCOM system that also activates FANS-1/A message set in FMC/ATSU.
 - Installation of A750 VDLM2 radio to activate domestic CPDLC, in an oceanic FANS-1/A aircraft equipped with analog VHF only.
 - Installation of a SATCOM system that has not been validated for use with FANS-1/A
- **Alterations that are a major change to type design, but do not add/change CPDLC functional capability, do not enact the recording requirement.**
 - Installation of ARINC 623 data link messages in CMU/ATSU
 - Replacing Manufacturer A VDLM2 radio with Manufacturer B VDLM2 radio.



Other Issues...

Q: Does the data link recording requirement apply to all data link communications or just CPDLC?

A: The rule applies to all data link communications, but the data link messages to be recorded are determined during the certification of the installation of the data-link system. At this time, the messages determined to be recorded are identified in AC 20-160.



Other Issues...

Q: Are 14 CFR Part 129 foreign operators installing data link comm equipment subject to the recording rule?

A: The data link recording rule applies only to foreign operators of US registered (N registered) aircraft. The data link recording rule does not apply to foreign operators of foreign registered aircraft.



Other Issues...

Q: Is the FAA data link recording rule harmonized with EASA?

A: At the time of publication of the FAA recording rule (April 7, 2008), JAA OPS-48A had been postponed in Jan 2005 indefinitely (ref Article 70 of Basic Regulation). The EASA OPS Implementing NPA 2009-02B (which contains data link recording requirements) was issued for public comment Jan 30, 2009.

The proposed EASA OPS Implementing NPA recording scope and effectivity dates are not harmonized with the FAA data link recording rule.



Discussion

