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| |  |  | | --- | --- | | C:\Users\gtriantafyllou\Desktop\ΑΠΑ images.jfif | ΑΙΤΗΣΗ ΓΙΑ ΠΙΣΤΟΠΟΙΗΣΗ CPDLC **Data Link Communication** **System Conformance Checklist** | | |  |  | | --- | --- | | **REFERENCES** |  | | **EC 29/2009** | Requirements on data link services for the single European sky | | **ICAO Annex 10,** | Aeronautical Telecommunications, Volume II to the Convention on International Civil Aviation | | **AC 120-70B** | Operational Authorization Process for Use of Data Link Communication System | | **AMC 20-11** | Acceptable Means of Compliance for the Approval of use of Initial Services for Air-Ground Data Link in Continental Airspace | | | | | |
| **APPLICANT INFO** | | |
| **Applicant:**  **Aeroplane registration:**  **Aeroplane manufacter:**  **Aeroplane type: MTOW: MPAX:**  **Serial No:**  **Date of manufact:**  **Contact person: Tel:** | | |
| **PART A (AIRWORTHINESS)** | | |
| **A 1) AIRWORTHINESS** | | |
| **Design Approval of Aircraft Data Communications Systems:**  **Note 1**: Evidence should be submitted that the aircraft equipment has a type design approval for CPDLC, ( for example STC , applied SB embodiment etc.)  The evidence should include the Aircraft Flight Manual (AFM or Supplement AFM) wording to indicate the aircraft and sub-network designators that define a specific data link capability and intended use for that aircraft type.  **Note 2** : If the aircraft is modified by STC/SB/etc then evidence that the system is tested per Note 3.  **Note 3:** EUROCAE ED-78A gives guidance on test equipment for this purpose.  **Note 4:** Where the design review finds items of non-compliance or not documented, the applicant may offer mitigation that demonstrates an equivalent level of safety and performance. Items presented by the applicant which impact safety, performance and interoperability requirements allocation will need to be coordinated with HCAA in accordance with **ED-78A**.  **YES □ No □**  Operator Ref : | | |
| **A 2) MAINTENANCE ASPECTS** | | |
| **Operator should cover the following aspects concerning aircraft maintenance:** | | |
| 1. **Maintenance procedures** for data link communications are approved as part of an operator’s initial maintenance manual approval or as a revision to that manual. To obtain authorization, an operator must demonstrate that their data link communications maintenance procedures are consistent with the data link communications systems manufacturer’s maintenance procedures and/or aircraft manufacturer’s maintenance procedures for data link communications.   **YES □ No □**  Operator Ref : | | |
| 1. **Maintenance Training.** Operators should provide adequate data link communication maintenance training to ensure that their maintenance personnel or contract maintenance personnel at facilities not staffed by the operator are able to properly implement data link communications-related maintenance programs. This includes, but is not limited to, installation, modification, correction of reported system discrepancies, and use of test equipment, procedures, MEL relief, and “return to service” authorizations. The training procedures should address testing data link communications on the ground in such a way that correctly evaluates data link communications functions while not introducing hazards with respect to simulated message traffic with an air traffic facility   **YES □ No □**  Operator Ref : | | |
| 1. **Data Link Communications System Software Updates.** Operators should assure that appropriate data link communication software updates are incorporated when necessary and that both air and ground systems are able to identify and properly respond to the installed level of data link communication capability.   **YES □ No □**  Operator Ref : | | |
| 1. **Data Link Communications “Return to Service” Policies.** Data link communications “return to service” policies should be established to ensure proper data link communication functions when an aircraft is returned to service after a data link communication failure or maintenance action.   **YES □ No □**  Operator Ref : | | |
| 1. **Configuration Control**. Operators should maintain their aircraft in an avionics equipment configuration, which has been shown to provide acceptable data link performance. Data link service providers will provide operators with information on poor performance by individual aircraft.   **YES □ No □**  Operator Ref : | | |
| **f. Aircraft with Data Link Communications System Differences.**  Operators having aircraft with data link communication systems differences in displays, controls, or procedures, or operators involved with interchange operations, must account for those data link communications systems differences. This is accomplished as part of an approved differences training program in the operator training syllabus.  **YES □ No □**  Operator Ref : | | |
| **A 3) Aircraft Flight Manual (AFM)** | | |
| AFM provisions should be addressed including information on data link communication modes of operation, normal and non-normal flight crew operating procedures, response to failure annunciations and any AFM limitations.  **YES □ No □**  Operator Ref : | | |
| **A 4)** **MEL** | | |
| Each operator intending to have authority to dispatch an aircraft with a data link communication system or component temporarily inoperative must do so in accordance with provisions of an approved MEL. MEL’s are approved for each operator and type aircraft, within provisions of the MMEL for that type.  **YES □ No □**  Operator Ref : | | |
| **PART B OPERATIONAL ASPECTS** | | |
| **B 1) FLIGHT CREW QUALIFICATION FOR USE OF DATA LINK COMMUNICATIONS** | | |
| **The operator must :** | | |
| 1. Provide to flight crewknowledge of data link communication concepts, systems and procedures (data link communications academic training).   Note Refer: To Data Link Communications Academic Training Syllabus .  **YES □ No □**  Operator Ref : | | |
| 1. Develop necessary flight crew knowledge and skills to properly respond to data link communications clearances or advisories.   **YES □ No □**  Operator Ref : | | |
| 1. Assess each pilot’s ability to properly use data link communications (data link   Communications initial evaluation).  **YES □ No □**  Operator Ref : | | |
| 1. Identify human factor issues specific to flight crew operation and interaction with the communication software, hardware, and operating environment (e.g., head-down time, situational awareness, loss of party-line information .   **YES □ No □**  Operator Ref : | | |
| 1. Maintain appropriate data link communication knowledge and skills which may   include data link communications recurrent training.  **YES □ No □**  Operator Ref : | | |
| **B2. Data Link Communications Academic Training Syllabus.** | | |
| **(1) General Concepts of Data Link Communications Operation.** Academic training should cover, in general terms, data link communications system theory to the extent appropriate to ensure proper operational use. Flight crews should understand basic concepts of operations involving data link services, nominal and unacceptable performance, normal and non-normal use, and other limitations.  **YES □ No □**  Operator Ref : | | |
| **(2) Level of Capability Provided by Data Link Communications and Expected Flight crew Response.** Academic training should explain the normal, expected pilot response to data link messages including acknowledgment, acceptance, rejection, or cancellation of a data link message.  **YES □ No □**  Operator Ref : | | |
| **(3) Data Link Communications Language, Terms and System Information.**  Flight crews should be familiar with data link message sets, abbreviations, conventions, contractions, terms, message addressing, facility and capability depiction on charts or in manuals, and terminology associated with applications.  **YES □ No □**  Operator Ref : | | |
| **(4) ATS Communication, Coordination, and Credits for use of Data Link Communications.**  Crews and dispatchers should be advised of proper flight plan classifications to use and any ATS separation criteria, procedures, or MEL credits that are based on data link communications use. Training should include procedures for transitioning to voice communication and other contingency procedures related to the operation in the event of abnormal behavior of the data link services. This would include any necessary coordination with ATC related to or following a special data link exceptional event. Ensure an acceptable transition to a new type of operation, such as procedures related to the transition to a different separation standard when data link services fail.  **YES □ No □**  Operator Ref : | | |
| **(5) Data Link Communications Equipment Components, Controls, Displays, Auto Alerts, and Annunciations.** Procedural training should include discussion of operations, terminology, symbology, optional controls and display features. This training should also include any items particular to an air carrier’s implementation or the uniqueness of its aircraft capability and/or procedures. Applicable message sets, expected transmission times, failure annunciations, constraints and limitations should be addressed.  **YES □ No □**  Operator Ref : | | |
| **(6) Interfaces and Compatibility with other Aircraft Systems.** Training should include the management of any applicable data link air/ground, including; VHF data link, satellite communications (SATCOM) data link and HF data link. This training should also address voice integration with other cockpit systems, FMS inputs to data link, and electronic flight instrument system (EFIS) interfaces, including any items particular to an air carrier’s implementation or uniqueness of its system. The priority selection of the equipment software by the operator needs to be addressed and trained so that the proper selection is made by maintenance, and crews report any related performance degradation resulting from equipment selection.  **YES □ No □**  Operator Ref : | | |
| **(7) MEL Provisions for Systems Related to CPDLC/ADS-C Operations.**  Flight crews, dispatch personnel must be familiar with the MEL requirements. For flights that intend to use data link, operators will adopt provisions for certain specific systems to be operational at dispatch, when required for the intended operation. MEL/dispatch deviation guide (DDG) must be amended to highlight the effect that loss of each associated system/subsystem has on data link operational capability.  **YES □ No □**  Operator Ref : | | |
| **(8). Data Link Communications Operational Use Training.**  In addition to the academic training described, appropriate operational use training (e.g., to ensure use of proper procedures and response to data link advisories) should also be given. Data link use training should expose the pilot to the typical messages expected.  Operational use training should include the following:  **(a)** Receiving and interpreting messages; **(b)** Accepting, rejecting or canceling messages; **(c)** Storing and retrieving messages; **(d)** Loading messages into appropriate controls/displays for use (e.g., FMS, FGCS) formulating and sending messages; **(e)** Loading message requests from the FMS (e.g., flight plan waypoints into data link for transmission if applicable); **(f)** Managing the communications systems; **(g)** Establishing and terminating system operation; **(h)** Switching use of radio frequency (RF) media (if this is a crew-controllable feature); and **(i)** Re-establishing system operation after loss of network log-on.  **YES □ No □**  Operator Ref : | | |
| **(9). Data Link Communications Recurrent Training.**  Data link communications training should be integrated as other established training programs and conducted on a recurrent basis. Recurrent training for data link communications should incorporate the recommendations of General Provision for ICAO Annex 6 Training and address any significant issues identified by line Operating Experience (OE), system changes, procedural changes, or unique characteristics.  **YES □ No □**  Operator Ref : | | |
| **(10). Data Link Communications Recurrent Evaluation.**  Recurrent data link communications checking should be incorporated as necessary, as an element of routine Proficiency Training (PT) or proficiency check programs.  **YES □ No □**  Operator Ref : | | |
| **(11). Data Link Communications Currency (Recency of Experience).**  Once crews have completed initial data link communications training and as long as recurrent training is accomplished in accordance with “Data Link Malfunction or Irregularity Reports “ the certificate holder will not be obligated to develop additional currency requirements.  **YES □ No □**  Operator Ref : | | |
| **(12). Line Checks and Route Checks.**  When data link communications-equipped aircraft are used during line or route checks, check airmen should routinely incorporate proper data link communications use as a discussion item.  **YES □ No □**  Operator Ref : | | |
| **(13). Line-Oriented Flight Training (LOFT).**  LOFT programs using simulators equipped with data link communications should be enhanced by interaction with data link communications. In addition, LOFT programs should consider proper crew use of data link along with other communication methods (SATCOM voice, VHF voice, HF voice, etc)  **YES □ No □**  Operator Ref : | | |
| **(14). Crew Resource Management (CRM).**  CRM programs should address effective teamwork in responding to data link exchanges.  **YES □ No □**  Operator Ref : | | |
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| **B3. Operator Responsibilities** | | |
| Operators have the following general responsibilities regarding data link communications:  **(1)** Verify data link communications functionality for each environment to be used and when new or modified components or software are introduced.  **(2)** Assure follow up and evaluation of exceptional data link events.  **(3)** Periodically assess data link communications training, checking, and maintenance programs to ensure their correctness, pertinence, timeliness, and effectiveness.  **YES □ No □**  Operator Ref : | | |
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| **B4. Data Link Event Reporting** | | |
| **General.** Operators and manufacturers are encouraged to develop procedures to ensure effective identification, tracking, and follow up of data link-related events, as appropriate. Such procedures should focus on providing useful information to:  **(1)** Properly assess the importance of data link events.  **(2)** Follow up on information related to specific data link events as necessary.  **(3)** Keep the industry and the Authority informed on the performance of data link in the Euro control area and international operations.  **(4)** Incidents associated with an ATS message transmitted via data link that affected or could  affect the safe operation of the aircraft should be reported, like any other incidents, in accordance  with **AMC 20-8 (**from 15 /11/2015 refer to EU 376/2014**)**.  **( 5)** Incidents reported in accordance with the provisions in 10.1 above should also be reported to  the air traffic services unit that was the data authority at the time of the incident.  **YES □ No □**  Operator Ref : | | |
| **Documents to be submitted** | | |
| **A) Airworthiness** | | |
| 1. Aircraft equipment capability (for example Service Bulletin applied / STC applied etc…) | | |
| 2.Applicable portion of AFM /or AFM supplement | | |
| 2. Maintenance personnel training syllabus | | |
| 3. Procedure for Software Upgrades | | |
| 4.Configuration Control of CPDLC system | | |
| 5.Applicable portion of Aircraft Maintenance Program | | |
| 6.Aircraft systems differences | | |
| 7.Applicable portion of aircraft MEL/MMEL | | |
| 8. Manuals and other publications (AMM, CMM, etc.) | | |
| **B) Operations** | | |
| 9.Academic training syllabus for Flight Crew / Dispatch personnel | | |
| 10. Operational Use Training | | |
| 11. Line Checks and Route Checks | | |
| 12. CRM program | | |
| 13. Procedure for verification of data link communications functionality when new or modified components or software are introduced. | | |
| 14. Keep the Authority informed on the performance of data link in the Euro control area and international operations. | | |
| 15. Applicable parts of Operation Manual | | |
| 16.Reporting Procedure. | | |
| **Applicant Compliance statement** | | |
| **I hereby declare that all documentation and information submitted have been verified and found in compliance with Regulation (EC) No 216/2008, its Implementing Rules and all other applicable requirements/procedures.** | | |
| **Continuing Airworthiness Manager**  **(name)** |  | **(Signature)** |
| **Flight Operation Manager**  **(name)** |  | **(Signature)** |
| **Date** | | |