ABSTRACT

SYSTEM SAFETY ASSESSMENT OF ATTITUDE AND HEADING REFERENCE SYSTEM (AHRS) OF N219 AIRCRAFT USING FAULT TREE ANALYSIS METHOD

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ABSTRACT

Attitude and Heading Reference System (AHRS) is a system that provides information about the pitch and roll as well as the heading (motion of the aircraft motion on the vertical axis) to the geographical coordinates around. This information is needed on the system as navigation and control of aircraft to show aircraft behavior and direction. So the attitude heading reference system (AHRS) in the N219 aircraft that have been in aircraft product would qualify to airworthiness certification from autorithy.

System Safety Assessment (SSA) is a safety assessment process of collects, analyzes, and documents verification that the system, as implemented, meets the system safety requirements established by the Functional Hazard Assessment (FHA). The Functional Hazard Assessment of attitude heading reference system as the start of SSA and become the beginning of the next step of SSA has been analyzed from the past research Preliminary System Safety Assessment (PSSA). The next step of SSA is Fault Tree Analysis (FTA). A Fault Tree Analysis (FTA) is a deductive failure analysis which focuses on one particular undesired event and provides a method for determining causes of the event.

The summarize of fault tree analysis shows AHRS System of the N219 aircraft intermediate event and basic event each failure condition. The failure condition total loss of attitude information (pitch and roll) on primary displays and MFD including standby instrument and total loss of heading information in the cockpit including standby instrument and standby compass comply with CASR part 23 1309 (b). The other failure condition not comply with CASR part 23 1309 (b).

Keywords: *AHRS, fault tree analysis, failure.*