

S1.4.2 AFTERMARKET AIRCRAFT CABIN AIR FILTER DESIGN & QUALIFICATION PROCESS

Kanwar Suri*¹, Michael Gao²

¹PTI Technologies Inc., ²PTI

Comfortable environment and sufficient air pressure to breathe at various altitudes is critical. Aftermarket filter element development requires approval by the Federal Aviation Administration (FAA) through the Parts Manufacturing Approval (PMA) process. This process allows aftermarket manufacturers to duplicate attributes of Original Equipment Manufacturer (OEM) components without the use of original design details (drawings, requirement specifications, performance data, etc.). This is done by performance & functional analysis of OEM components, measuring each feature, disassembling, determining material composition and designing PMA filter elements to perform equal to or better than initially designed. This paper documents the process used for designing and qualification of aftermarket aircraft cabin air filter elements.