

High Level Requirements Document

The Hybrid Turboprop will be referred to "The Aircraft" and by definition will utilize hybrid turbo-prop engines.

FUNCTIONAL and PERFORMANCE REQUIREMENTS

- Aircraft must carry its payload, passengers, pilots, and crew from one location to another within its operating range of 500 nmi with near zero risk of safety hazard
- Aircraft must be able to complete at least three cycles per day
- Aircraft must be able to retain functionality after a lightning strike
- Aircraft must be able to retain navigational and communication capabilities after losing some or all of its engines
- Aircraft must be able to perform a landing under substantial crosswind conditions
- Aircraft must include a maintenance terminal with system diagnoses can be suggested and troubleshooting can be carried out by trained maintenance personnel (see the A350 as an example)
- Aircraft must interface with jetways and ladders used in all US airports in order to facilitate passenger and payload loading
- Aircraft must utilize CNS avionics with at least three redundancies
- Passengers who are 5'9" or shorter must be able to fully stand up while in the aisle
- Passengers must be able to see general surroundings with ease
- Aircraft must have a maximum range that is at least twice that of its mission
- Aircraft must be able to deliver passengers and payload to their intended locations within a target timeline
- Aircraft must be able to achieve pressurized cabin conditions to allow it to fly at altitudes of at least 36,000 ft.
- Aircraft must be able to utilize modern control technology to allow for a smooth and comfortable flight for flight crew and passengers
- Aircraft wingspan must be short enough to load passengers in a variety of gates at different US regional airports
- Aircraft must be manufactured from recycled materials utilizing sustainable manufacturing techniques
- Aircraft must be manufactured in the United States
- Aircraft must produce less emissions than its contemporaries, the ATR72 & De Havilland Canada Dash Q400
- Aircraft must provide autopilot limits on controls
- Aircraft must provide cup and food holders in its seats for passengers
- Aircraft must be able to produce cabin temperature and in-seat air conditioning that allow for a range of passenger comfort
- Aircraft must be able to produce individualized cabin lighting for passenger comfort
- Aircraft must include a system whereby crew can make announcements to passengers
- Aircraft must include emergency egress capabilities similar to commercial aircraft of the same size.

- Aircraft must utilize a flight deck that is similar to comparable flight decks as much as possible within reason.