CLAIMS

What is claimed is:

1. A nacelle assembly for a high-bypass gas turbine engine comprising:

a core nacelle defined about an engine centerline axis;

a fan nacelle mounted at least partially around said core nacelle to define a fan bypass flow path for a fan bypass airflow; and

a fan variable area nozzle axially movable relative said fan nacelle to vary a fan nozzle exit area and adjust a fan pressure ratio of said fan bypass airflow during engine operation, said fan variable area nozzle operable to vary said fan nozzle exit area by about 20%.

2. The assembly as recited in claim 1, further comprising a controller operable to control said fan variable area nozzle to vary said fan nozzle exit area and adjust said pressure ratio of said fan bypass airflow.

3. The assembly as recited in claim 2, wherein said controller is operable to reduce said fan nozzle exit area at a cruise flight condition.

4. The assembly as recited in claim 2, wherein said controller is operable to control said fan nozzle exit area to reduce a fan instability.

5. The assembly as recited in claim 1, wherein said fan pressure ratio is less than about 1.45.

6. The assembly as recited in claim 1, wherein said fan variable area nozzle defines a trailing edge of said fan nacelle.

7. The assembly as recited in claim 1, further comprising a controller operable to axially move said fan variable area nozzle to vary said fan nozzle exit area in response to a flight condition.

8. The assembly as recited in claim 1, further comprising a gear system driven by a core engine within said core nacelle to drive a fan within said fan nacelle.

9. The assembly as recited in claim 1, further comprising a gear system driven by a core engine within said core nacelle to drive a fan within said fan nacelle, said fan defines a corrected fan tip speed less than 1150 ft / second.

10. The assembly as recited in claim 1, further comprising a gear system driven by a core engine within said core nacelle to drive a fan within said fan nacelle, said core engine includes a low pressure turbine which defines a low pressure turbine pressure ratio that is greater than about five (5).

11. The assembly as recited in claim 1, further comprising a gear system driven by a core engine within said core nacelle to drive a fan within said fan nacelle, said core engine includes a low pressure turbine which defines a low pressure turbine pressure ratio that is greater than five (5).

12. The assembly as recited in claim 1, further comprising a gear system driven by a core engine within the core nacelle to drive a fan within said fan nacelle, said gear system defines a gear reduction ratio of greater than or equal to about 2.3.

13. The assembly as recited in claim 1, further comprising a gear system driven by a core engine within said core nacelle to drive a fan within said fan nacelle, said gear system defines a gear reduction ratio of greater than or equal to about 2.5.

14. The assembly as recited in claim 1, wherein said fan bypass airflow defines a bypass ratio greater than about six (6).

15. The assembly as recited in claim 1, wherein said fan bypass airflow defines a bypass ratio greater than about ten (10).

16. The assembly as recited in claim 1, wherein said fan bypass airflow defines a bypass ratio greater than ten (10).

CLAIMS

What is claimed is:

1. A nacelle assembly for a high-bypass gas turbine engine comprising:

a core nacelle defined about an engine centerline axis;

a fan nacelle mounted at least partially around said core nacelle to define a fan bypass flow path for a fan bypass airflow;

a gear system driven by a core engine within the core nacelle to drive a fan within said fan nacelle, wherein said fan is configured to rotate at a corrected fan tip speed of less than 1150 ft/second; and

a fan variable area nozzle axially movable relative said fan nacelle to vary a fan nozzle exit area and adjust a fan pressure ratio of said fan bypass airflow during engine operation within a range less than 1.45, said fan variable area nozzle operable to vary said fan nozzle exit area by 20%.

2. The assembly as recited in claim 1, further comprising a controller operable to control said fan variable area nozzle to vary said fan nozzle exit area and adjust said pressure ratio of said fan bypass airflow.

3. The assembly as recited in claim 2, wherein said controller is operable to reduce said fan nozzle exit area at a cruise flight condition.

4. The assembly as recited in claim 2, wherein said controller is operable to control said fan nozzle exit area to reduce a fan instability.

5. The assembly as recited in claim 1, wherein said fan variable area nozzle defines a trailing edge of said fan nacelle.

6. The assembly as recited in claim 1, further comprising a controller operable to axially move said fan variable area nozzle to vary said fan nozzle exit area in response to a flight condition.

7. The assembly as recited in claim 1, further comprising a gear system driven by a core engine within said core nacelle to drive a fan within said fan nacelle, said core engine includes a low pressure turbine which defines a low pressure turbine pressure ratio that is greater than five (5).

8. The assembly as recited in claim 1, further comprising a gear system driven by a core engine within the core nacelle to drive a fan within said fan nacelle, said gear system defines a gear reduction ratio of greater than or equal to 2.3.

9. The assembly as recited in claim 1, further comprising a gear system driven by a core engine within said core nacelle to drive a fan within said fan nacelle, said gear system defines a gear reduction ratio of greater than or equal to 2.5.

10. The assembly as recited in claim 1, wherein said fan bypass airflow defines a bypass ratio greater than six (6).

11. The assembly as recited in claim 1, wherein said fan bypass airflow defines a bypass ratio greater than ten (10).