Boeing test breakthrough means more reliable connectivity on airplanes

- Calibration approach yields more comprehensive evaluation for safety standards and clears way for better in-cabin signals

SEATTLE, Dec. 19, 2012 /PRNewswire/ -- Boeing (NYSE: BA) has developed an advanced method to test wireless signals in airplane cabins, making it possible for passengers to enjoy more reliable connectivity when using networked personal electronic devices in the air.

Boeing engineers created a new process for measuring radio signal quality using proprietary measurement technology and analysis tools. This enables engineers to more efficiently measure how strong a signal is and how far it spreads, ensuring safe yet powerful signal penetration throughout an airplane cabin.

Once the new method was established, testing that previously took more than two weeks to conduct was reduced to 10 hours.

"Every day we work to ensure that Boeing passengers are travelling on the safest and most advanced airplanes in the world," said Dennis O'Donoghue, vice president of Boeing Test & Evaluation. "This is a perfect example of how our innovations in safety can make the entire flying experience better."

This technology was first developed to more thoroughly and efficiently ensure that signal propagation met the regulatory safety standards that protect against interference with an aircraft's critical electrical systems.

Initially using a de-commissioned airplane, the team from Boeing Test & Evaluation laboratories conducted a series of such tests. The team determined that potatoes were ideal stand-ins for passengers, given their similar physical interactions with electronic signal properties. Much of the testing was conducted on the grounded airplane with the seats filled with 20,000 pounds of potato sacks. The test data was then validated on the ground with human stand-ins for passengers.

A wireless signal inside an airplane can deviate randomly when people move around. Boeing's new test process takes advantage of state-of-the-art technology and ground-breaking statistical analysis to identify strong and weak signal areas and balance them by adjusting the connectivity system accordingly. The result is increased safety and reliability.

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