



Press Release

03/04/2009 **HKUST Joins Hands with Boeing to Develop Wireless System for Higher Maintenance Efficiency**

The Hong Kong University of Science and Technology (HKUST) has teamed up with aircraft manufacturer Boeing to develop a wireless system that will drastically enhance the efficiency of aircraft maintenance, repair and overhaul.

"Aircraft maintenance is a massive, complicated operation and involves a large amount of paper work and commuting between the aircraft and the maintenance office. Hence we aim to develop a wireless-enabled computer system that eliminates most of the printouts and the need to commute," said Prof Gary Chan, Associate Professor in the Department of Computer Science and Engineering at HKUST.



HKUST's Prof Gary Chan (right) with Boeing's Principal Engineer Timothy Mitchell

Prof Chan currently leads a team of researchers working on the project called Lean Aviation Network, or LAviNet in short.

"There are millions of parts in an aircraft, and work sheets can run up to hundreds of pages. Currently a lot of time and effort is spent on travelling on foot between the aircraft and the maintenance office, updating the logbooks and signing off worksheets," said Prof Chan.

"The potential benefits of the LAviNet system are many. First, it will significantly enhance the efficiency of maintenance, repair and overhaul, leading to more productive deployment of the aircraft fleet which, in turn, is likely to result in increased revenue. Second, with the need for commuting much reduced, the staff will be able to concentrate more on the actual maintenance work. Third, with greatly reduced paper printouts, the operation will become more environmentally friendly," Prof Chan explained.

In addition, LAviNet also enables the maintenance staff on site to execute, through the use of wireless-enabled hand-held devices, a host of essential tasks. These include obtaining worksheets, looking up maintenance procedures, ordering spare parts, renewing work cards, and updating log books.

Apart from Boeing, the project is supported by Hong Kong Aircraft Engineering Company (HAECO) and Altai Technologies Limited, a spin-off company from Hong Kong Applied Science and Technology Research Institute (ASTRI) based in the Hong Kong Science Park.

With preliminary research started, the design, testing and commissioning of LAviNet is expected to take two years.

Back in 2007, HKUST became the first and only university in Hong Kong chosen to develop two wireless communication projects for Boeing's commercial planes. The first project gives seamless connectivity support for Boeing's line maintenance technicians, while the second project enables line maintenance technicians to quickly and safely form a team to check an airplane parked far away from the wireless access points. The research team was led by Professors Lionel Ni and Qian Zhang.

Apart from HKUST, Boeing is collaborating with Tsinghua University in Beijing, Shanghai Jiao Tong University in Shanghai and Southeast University in Nanjing to conduct research on other facets of wireless communication.

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