



**Media Release**  
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## **NICTA and University of Adelaide Concertina plays the right tune at ARTEMIS**

A robotic concertina developed at the University of Adelaide and sponsored by NICTA, Australia's Information and Communications Technology (ICT) Research Centre of Excellence, has won second place in a significant international technology contest, the ARTEMIS Orchestra competition in Nice, France.

The winning team consisted of University of Adelaide Mechanical Engineering Masters students Mohsen Bazghaleh, Yudi Wang, Long Xin, Jia You, Chen Fei Yu, Yin Yuan and University of Adelaide lecturer Dr Steven Grainger.

The 48-key robotic concertina was designed and built as part of a Masters student project at the University of Adelaide. Here is a link to a video of the Concertina practicing just before the contest: <http://www.youtube.com/watch?v=Z0HXBGam6po>.

NICTA sponsored the concertina's entry into the Artemis competition. Last year NICTA held a national competition, the NICTA Candiago Cup Challenge, to search for a suitable entry into the international ARTEMIS Orchestra Competition.

The NICTA and University of Adelaide Concertina won the Candiago Cup Challenge. It is the second time that the University's mechanical engineering school has been represented at the ARTEMIS competition, earning second place in Berlin in 2007 with a robotic violin design.

University of Adelaide lecturer in the School of Mechanical Engineering, Dr Steven Grainger, said the concertina was controlled by a microprocessor-based system. "The microprocessor drives the bellows via an electric motor and uses feedback to control the air pressure. It also operates electromechanical wires that open and close valves, letting air flow over the sound-producing reeds."

At the ARTEMIS Orchestra competition the 48-key Stagi English Tenor concertina played a number of pieces including Rimsky-Korsakov's Flight of the Bumblebee.

Around 98 percent of all computer systems are now embedded inside other devices, creating smart devices. The ARTEMIS Orchestra competition challenges contestants to build devices that play real musical instruments, to demonstrate the creative potential of embedded systems. Aimed at higher education and universities, the competition is organised by the association of European actors in embedded systems research and development (ARTEMISIA).

"It is pleasing to see NICTA-sponsored technology taking its place on the European stage," said NICTA CEO Dr David Skellern, "The ARTEMIS Orchestra competition helps attract outstanding students into this important field of embedded systems. Moreover, avenues such as ARTEMISIA provide enormously valuable links between Australia's ICT innovations and Europe's sophisticated and far-reaching ICT marketplace."

First place at this year's ARTEMIS competition went to TeamDARE from the Netherlands who competed with an acoustic guitar and drums. Third place went to a team of students from universities in The Netherlands, Romania and Finland, led by Hamk University.

### **About NICTA**

National ICT Australia Ltd (NICTA), Australia's Information and Communications Technology (ICT) Research Centre of Excellence, is developing technologies which will meet the current and future needs of the community in fields which will lead to large economic, social and environmental benefits for Australia. NICTA has five laboratories around the country. Since NICTA was founded in 2002, it has created four new companies, developed a substantial technology portfolio of patent applications and continues to supply new talent to the ICT industry through the NICTA-enhanced PhD program.

NICTA is funded by the Australian Government as represented by the Department of Broadband, Communications and the Digital Economy and the Australian Research Council through the ICT Centre of Excellence program. It was established and is supported by its members: The Australian Capital Territory Government; The Australian National University; NSW Department of State and Regional Development; and The University of New South Wales. NICTA's partners include: the University of Sydney; University of Melbourne; the Victorian Government; the Queensland Government; Griffith University; Queensland University of Technology; and The University of Queensland.

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