

**Full title/name of award:** STARTUP@SINGAPORE NUS INTRO AWARD

**Team Name:** BYTESQUARE TECHNOLOGIES

**Supervisor:** A/Prof Tan Kok Kiong

**Members:** Mr. Lee Tze Chung  
Mr. Goh Han Leong  
Mr. Chung Chun He  
Mr. Ong Kok Choong

**Details of Company:** ByteSquare Technology Private Limited is a spin off from National University of Singapore and is founded by a team of ECE Professor, research postgraduate, graduates and undergraduate. ByteSquare Technology is incorporated in Singapore in 2004 through ECE Technopreneur Incubation Program and NEC Student Enterprise Funding.

Armed with INTRO patent pending technology, Complete Mobile E-Mail Management System, ByteSquare proceed to attempt the development of the raw technologies into a commercial product with a sound business plan.

After eight months of hard work, ByteSquare put the business plan and the product beta prototype to the test at Startup @ Singapore Business Competition. ByteSquare won the NUS INTRO award and have attracted potential investors and sales lead from the event.

**Details of Members:** A/Prof Tan Kok Kiong and Mr. Goh Han Leong are the inventors of the Complete Mobile E-Mail Management System. Mr. Goh Han Leong is currently a ECE Department Research Scholar working under the supervision of A/Prof Tan Kok Kiong

Mr. Lee Tze Chung graduated from NUS ECE Department in 2004.

Mr. Chung Chun He graduated from NUS ECE Department in 2003.

Mr. Ong Kok Choong is currently a fourth year NUS CPE undergraduate.



From left to right:  
Mr. Goh Han Leong, Mr. Lee Tze Chung, Mr. Ong Kok Choong, A/Prof Tan Kok Kiong

**Full title/name of award:** TAN KAH KEE YOUNG INVENTORS AWARD 2005 – DEFENSE SCIENCE CATEGORY

**Team Name:** BLUETOOTH CONVOY

**Supervisor:** A/Prof Tan Kok Kiong

**Members:** Mr. Goh Han Leong  
Mr. Ong Kok Choong

**Details of Invention:** The invention makes use of the Bluetooth enabled mobile devices to establish a virtual link list between all the participating mobile devices.

It is accordingly the object of the invention to establish an ordered link list Bluetooth connection between the mobile devices held by the drivers in a vehicle convoy movement. The purpose is to detect any break in the convoy and alert the leading vehicle to slow down to wait for the deviate vehicle.

Using a novel recursive tree algorithm that operates on 2 separate recursion algorithm, the invention establishes the following performances improvements over normal link list structure.

- **Fast response time** – Minimum number of communication hops between first and last vehicle in the convoy enable a shorter upper bound round trip communication time.
- **Efficient Breakage Detection** – Efficient divide and conquer search algorithm is employed over the ordered link list to minimize search count and reduce Bluetooth frequency collision probability.

**Its role in Singapore Defense:** During war time, telecommunication base station can be expected to be out-of-operation and the cellular phone would be rendered useless. The invention has ingeniously found an application for the cellular phone to be used without the base station.

During peace time training, the invention increases the safety in training at virtually no cost. With the high cellular phone penetration rate in Singapore, it will not be difficult to find a soldier with cellular phone that is Bluetooth enabled.

Using the novel tree algorithm, the invention is able to join up a large number of vehicles without deterioration in performance.