News

Viva la *Velox!

*Latin for swift

Infographics journalists SIMON ANG and FADZIL HAMZAH find out what goes on inside Velox-1, a satellite project spearheaded by Nanyang Technological University undergraduates, set for launch in 2013

"The hardest part of this project was managing the students."

— Associate Professor Low Kay Soon on the challenges faced building a satellite

TNP PICTURES: SIMON ANG
SOURCE: NANYANG TECHNOLOGICAL UNIVERSITY

TNP PICTURE: KUA CHEE SIONG

GROUNDBREAKING: Eleven of the students from the Undergraduate Satellite Programme team, who have been working on the Velox-I. It has been in development since last year.

Over 150 students helped to build it

But only two will be needed to launch the 5kg Velox-I satellite

REPORT: **TONG SU YEE**
sytong@sph.com.sg

MORE than 150 students helped create the Velox-I – Singapore's first student-made pico/nano satellite pair.

But only two of the students will be there when the 5kg satellite is finally launched into outer space in 2013.

The rest would have graduated by then or would not be needed for the launch.

Velox, which means swift in Latin, has been in development since last year and is expected to be completed by next year.

Associate Professor Low Kay Soon from the School of Electrical and Electronic Engineering in Nanyang Technological University (NTU), who is in charge of the project, said: "The satellite is small enough to fit into a hand-carry luggage, so not everybody needs to be there for the launch."

A representative team of 11 NTU students and alumni were also present at the media conference yesterday.

The students were all part of NTU's Undergraduate Satellite Programme (USP), which includes students from the second to the fourth year.

And they were glowing with pride.

As PhD student Tan Chun Kiat, 25, who worked on the design and structure of the satellite, put it: "It's like helping to give birth to a baby.

"I definitely want to be there to see it launch, but what's most important is that the satellite works."

Students were tasked to design and build a pico (which weighs about 1kg) and nano (between 1kg and 20kg) satellite pair. (See illustration on facing page.)

They also had to develop a ground station, and design and develop a nano-satellite payload, an application for the satellite.

The Velox-I has two payloads: A camera and quantum physics experiment.

When the satellite is in space, the nanosatellite will capture images of the Earth.

The picosatellite will conduct physics experiments that can be done only in space.

Prof Low is negotiating with overseas companies to find a suitable rocket for the Velox-I to piggyback its load.

Big deal

He never envisioned that the student-made satellite would be this big a deal when he first signed up for the programme.

He said: "It's one step closer to becoming a rocket scientist."

PhD student Charlie Soon, 26, who helped with the power subsistence of the Velox-I, said: "It's okay if we aren't there for the launch. We need to take care of the ground station in NTU when it launches.

"And we can watch the video of it being launched anyway."

Mr Soon is no longer officially attached to the Velox-I project, but he is mentoring the current batch of students working on the satellite.

"When the satellite launches in 2013, it will carry with it the hard work of Prof Low and 150 NTU students, both past and present," he added.

"This is so much bigger than (getting) an A. One day, this will be in the sky," said Mr Soon.