



Rapiscan tests new travel security technologies with VELA



Rapiscan Systems have teamed up with University College London (UCL) to use STFC's VELA (Versatile Electron Linear Accelerator) for innovative testing to develop new technologies for future products.

The challenge

Anyone who has recently been on holiday will be familiar with the process of putting their bag on an airport conveyor belt, taking off their boots and tiptoeing sheepishly through the security detectors — but how much do we actually know about the technology behind it all? Rapiscan Systems is a global provider of walk-through metal detectors and cargo-scanning x-ray machines, and as such is constantly investing in innovative new R&D to maintain its position at the forefront of innovative technological developments. In particular, Rapiscan was keenly interested in methods of generating three-dimensional x-ray images for more comprehensive cargo screening.

The solution

VELA, based at the Science and Technology Facilities Council's (STFC) Daresbury Laboratory, was the ideal source to perform the proof-of-concept experiments, which involved scattering x-ray photons off a series of objects. The high energy and short pulse widths, combined with the expertise of the STFC's Accelerator Science and Technology Centre, enabled Rapiscan to successfully test their theoretical assumptions. The investigation, carried out in partnership with UCL, would have been impossible otherwise, due to the unique equipment and expertise being unavailable elsewhere.

The benefits

It may be too early to tell what kind of impact this new technology could have on the security industry, but encouraging results from the proof-of-concept experiments carried out using VELA have prompted Rapiscan to continue long-term investment in this strategic product development programme. The further the concept is developed, the more likely it will result in a breakthrough product that would return economic benefits for both the company and the UK in general, as well as protecting lasting job creation for skilled technical staff in the UK.

"Rapiscan Systems is committed to creating a secure future for the travelling public and the development of new and innovative imaging techniques is key to achieving this goal. VELA was ideal for this project, which will help to establish the potential for the use of high energy backscatter imaging in non-invasive inspection of large vehicles and cargo."

– Dr Edward Morton, Chief Technical Officer, Rapiscan Systems

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