

[TRAVEL](#) [JOBS](#) [PROPERTY](#) [TENDERS](#) [DATING](#) [LOGIN / REGISTER](#)

SA VOTES 2014

NEWS
OPINION
BUSINESS
ARTS & CULTURE
EDUCATION
SCI-TECH
MULTIMEDIA
SPECIAL REPORTS
IN THE PAPER
ZAPIRO
PARTNERS
SCI-TECH
SCIENCE
TECHNOLOGY

Sci-Tech

SA sends hard proof of Large Hadron Collider collaboration

05 SEP 2013 12:04 | SARAH WILD



South Africa-made components have been successfully integrated into an experiment on the largest particle accelerator on earth.

South Africa-designed and manufactured hardware was this week installed on the international Atlas project on the Large Hadron Collider (LHC).

The LHC – which straddles the border between France and Switzerland, about 100m underground – is a massive particle accelerator, owned by the European Organisation for Nuclear Research (CERN). The super-conducting magnets in the accelerator propel two beams of particles – protons or lead atoms – around the 27km ring and smash them into each other in a bid to understand the particles that constitute matter.

There are four experiments, stationed along the accelerator tunnel, to detect what happens when the particles collide. South Africa is involved in two of these: Atlas (A Toroidal LHC Experiment) and Alice (A Large-Ion Collider Experiment).

Last year, CERN announced that they had discovered a particle which may be the elusive Higgs-Boson, a sub-atomic particle that is thought to give matter its mass.

South Africa – through iThemba Laboratory of Accelerator-Based Sciences, the University of Johannesburg, Wits University, the University of KwaZulu-Natal and the University of Cape Town – has been involved in LHC experiments for a number of years.

Used for filtering raw data

This week, Wits University doctoral candidate Robert Reed's high-voltage board was successfully integrated in the Atlas experiment.

At the moment, the LHC is closed for maintenance and an upgrade to boost the energy at which particles are smashed together.

"On the Atlas detector, you have these drawers of electronics that do all the filtering of the raw data that comes out of the detector," Reed explained. "These electronics have to be verified and checked before the LHC starts up in 2015."

This high-voltage board is part of the mobile test bench that has been developed to check that the electronics are working. This board simulates collision events, in order to check that the front-end electronics are working. "The new mobile testing equipment basically is a mobile box which the detector maintenance people will use to connect to the detector which would run the test on this drawer of electronics," Reed said.

Professor Bruce Mellado of Wits's high energy physics group in the school of physics is more effusive: manufacturing the high-voltage board is "a proof of principle that we in South Africa can deliver with similar standards as our European counterparts. It is also not only an academic exercise, but a real product that will be

used for real detector maintenance of the Atlas detector."

Six boards would be produced, manufactured by the South African electronics industry, to be used for Atlas maintenance before the LHC re-opens in 2015, the Wits University said.

Sarah Wild is a multiaward-winning science journalist.

▸ [Read more from Sarah Wild](#)

▸ Twitter: [sarahemilywild](#)

[post a comment](#) [email this article](#) [print this article](#) [login to clip](#)

MORE COVERAGE

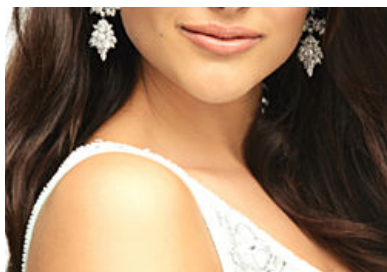
- ✦ [Could this boson be the 'God particle'?](#)
- ✦ [Hawking vs Turok: Betting on the origin of the universe](#)
- ✦ [Stephen Hawking and CERN team win \\$3-million in science prize money](#)
- ✦ [Scientists find links to 'God particle'](#)

WE RECOMMEND



Zuma's R8.8mn lawyer bill 'is shameful'

(News)



Rolene Strauss crowned Miss SA 2014

(News)



ANC NEC to address Nkandla report

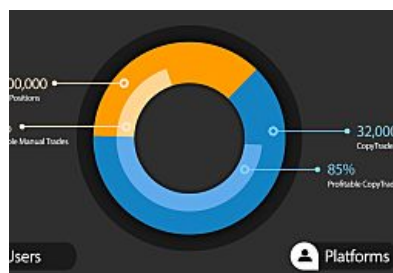
(News)



Fighting to love their Nigerian men

(News)

FROM AROUND THE WEB



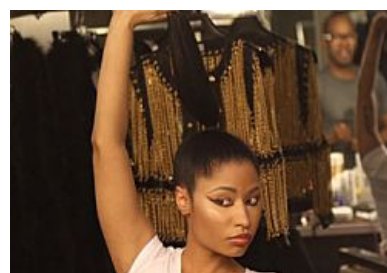
A Revolutionary Stock Trading Platform

(eToro Blog)



The Future Technology Set to Disrupt the Workplace Related Content The Future is a Foreign Country Seeing the

(Business Value Exchange)



Nicki Minaj Shows Off Her Natural Hair

(NaturallyCurly)





Holographic technologies: the end of conventional business meetings?

(BBC)

Recommended by 

TOPICS IN THIS SECTION

TOPICS

Large Hadron Collider



COMMENTS



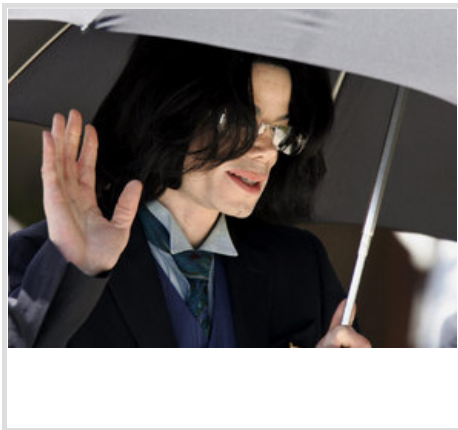
CONNECT



Get the M&G in your inbox daily

SUBSCRIBE

MORE FROM THE M&G



Most Popular This Week

MOST READ | **MOST COMMENTED**

Hanekom on SKA: Africa needs to bridge the training and skills gap

CLIENT MEDIA RELEASES

Press Offices ⬆

The importance of business rules
[Faculty Training Institute](#)

Imperial buys share in Eco Health
[Imperial Logistics](#)

Getting value from DPL
[Security Summit 2014](#)

The Market Theatre presents comedy station
[The Market Theatre](#)

Business Rules experts return to SA

Faculty Training Institute

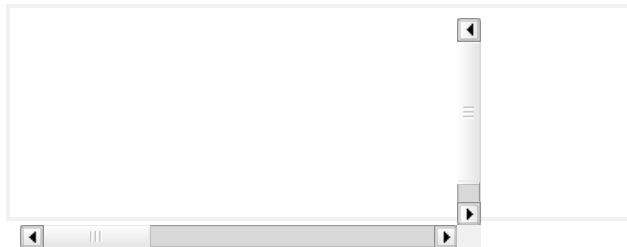
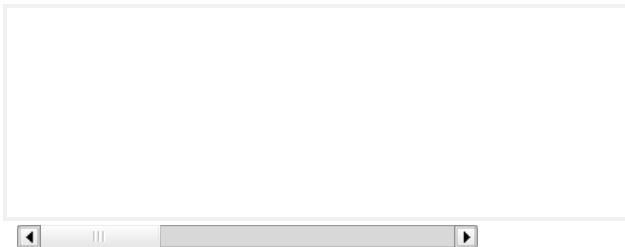


SUBSCRIBE ONLINE:

- Paper Edition
- Kindle Edition

- iPad Edition
- Online Edition

ADVERTISEMENTS



[Contact Us](#) [About Us](#) [Story Tip-offs](#) [Corrections And Clarifications](#) [Legal](#) [Ethics & Social Media Policy](#) [Comments Guidelines](#)

[Advertising](#) [Rate Card](#) [Subscriptions](#)

severalnines

