

SKA drives innovation and market capitalization in the ICT sector

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for a
world
in motion™

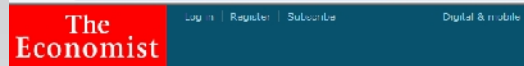
Huge radio astronomy projects like SKA influence various industry sectors



Software
High-speed

...and drive there innovation and market capitalization.
Let's see how

Big astronomy projects like SKA create huge public interest



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The Square Kilometre Array Divide and rule

The world's biggest astronomy project is split between Australasia. That gives South Africa, in particular, a chance to shine in scientific matters.

Jun 2nd 2012 | From the print edition

ZEITUNG ONLINE | WISSEN

STARTSEITE POLITIK WIRTSCHAFT MEINUNG GESELLSCHAFT

Deutschland | Umwelt | Gesundheit

Deutschland will bei Superteleskop einsteigen

Ministerin Schavan hat angekündigt, dass sich Deutschland an der größten Teleskopanlage der Welt beteiligen will. Noch wird gestritten, wo das Fernrohr entstehen soll.



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SQUARE KILOMETER Aufbruch in

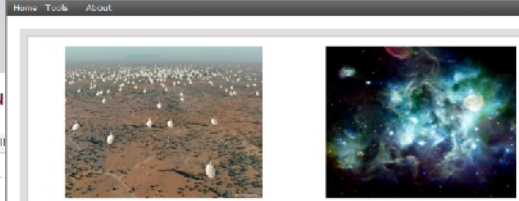
Dieses Projekt ist so ein Blick in die Fernarrangieren sich die

VON ALEXANDER STIRN

Kann man ein Teleskop wenn es ein Dipl Empfänger handelt.

Array', kurz SKA, hergestellt werden soll. Darauf haben sich am vergangenen Freitag die beteiligten Nationen nach zehntägigen Verhandlungen

etwa 3000 Teleskopchassis wird das riesige Observatorium demnach umfassen, ergänzt von unzähligen kleineren Antennen. Gemeinsam sollen die Radioröhren das Schicksal von Galaxien entschlüsseln, das Geheimnis der Dunklen Materie lüften, weit in die Anfangszeit des Universums zurückblicken und eines Tages vielleicht sogar Spuren von Leben auf einem anderen Planeten entdecken. All das mit bislang nicht gekannter Auflösung und Empfindlichkeit.



Die Woche Aktuelle Ausgabe
Ausgabe abrufen
Abonnement
Ausgabe bestellen
Informationen

Anzeige



Public interest

Public funding
for the entire project or sub-topics

Industry engagement

Public funding facilitates advanced research projects

Example Nokia Siemens Networks research history

100GET



A Celtic project

Development of 100Gbps carrier-grade Ethernet transport technologies for a fast, reliable and secure Internet of the future



STRONGEST



Ultra-high capacity packet-optical multilayer transport network with a multi-domain, multi-technology control plane

Fibre Optic Network for Distributed, Extendible Heterogeneous Radio Architectures and Service Provisioning



Development of a hybrid optical-radio infrastructure, where simplified Remote Antenna Units (RAU) are transparently connected to a central unit, and exploiting the potentialities provide by such infrastructure.

Today it is “just” innovation.
Tomorrow it is the revenue generating product

Galactico



blending diverse photonics And eLectronics on silicon for integrAted and fully funCTional COherent Tb Ethernet



MODE GAP



Multit-mode capacity enhancement with PBF fiber

Well-funded international projects result in fast market capitalization

Example Celtic / ICT Project 100GET



Total budget:	66MEuro
Total effort (3y):	396 person years
Celtic project start:	10/2007
Project end:	12/2010
100G product availability:	2011

Public funding from BMBF (Germany), MEFI (France), VINNOVA (Sweden), TEKES (Finland), MITT (Spain).

Celtics
Award of
Excellence
in Gold

International research & development required for SKA:

- Efficient traffic aggregation
- Highest-speed transmission
- Highly accurate clock distribution

Advanced Research projects cover a wide range of applications

Example SASER

- Celtic+ Project, funded by national funding agencies (BMBF, DGCIS, Tekes and Tubitak)
- Planned as transport project incl. energy efficiency
- Extended with security topics
- Duration: 01.07.2012 – 31.08.2015

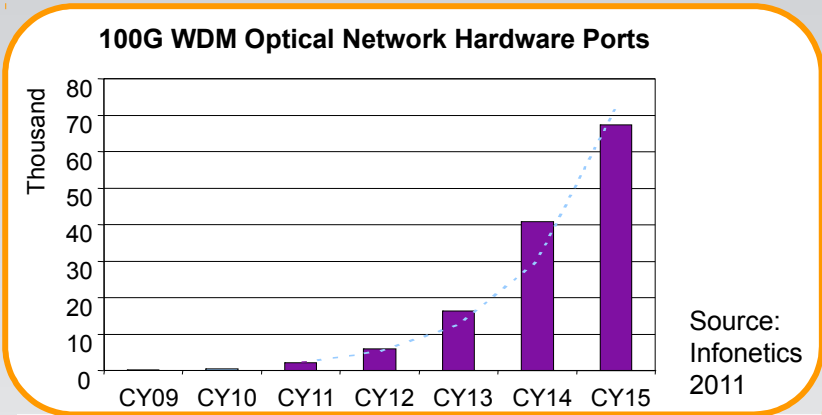
A European solution based on the strength and expertise in security and high speed optical transport

- 64 partners (industry, SME, universities and research institutes)
- 6 countries (Germany, France, UK, Denmark, Turkey and Finland)
- Clustered in 3 sub-projects + 3 cross activities



- Develop a new architecture based on flexible and energy-efficient layer 1 transmission
- Reduce layer 3 NEs
- Add security features on layer 1 and try to solve security problems in remaining layer 3 part
- Optimize resilience and availability mechanisms for new architecture

SKA is not only an innovation driver – the high expected volumes will shape a whole industry sector



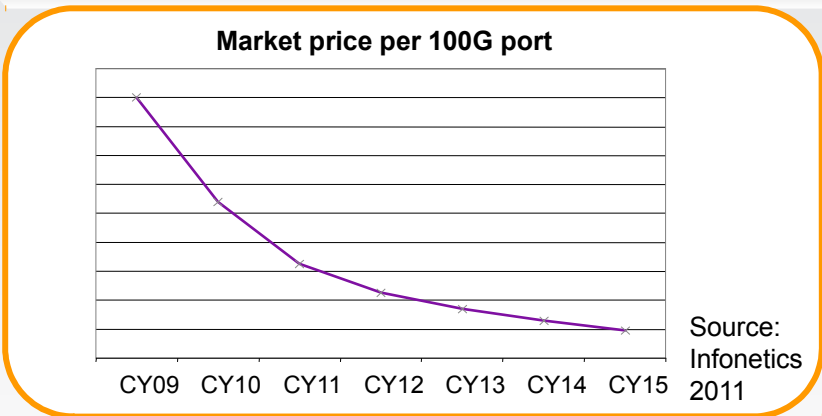
Bandwidth assumption:
1 Tbps throughout
Phase 1 and 2

Bandwidth assumption:
41 Tbps in Phase 1
61 Tbps in Phase 2

**360 (Phase 1) +
640 (Phase 2)
= 1 000
x 100G needed**

**14 760(Phase 1) +
46 240 (Phase 2)
= 51 000
x 100G needed**

Increasing shipment volumes reduce prices – and costs



... And this is just to connect the dishes in the spirals!

SKA will shape market prices, the costs and the whole industry

100Gbps is not the end of channel capacity 400Gbps and 1Tbps are already on the horizon

Nokia Siemens Networks leads the way to 400G optical transport networks

Monaco – June 14, 2010

New technology makes company's hiT 7300 DWDM platform ready for higher capacity

A future-proof optical transport network that addresses the surging demand for bandwidth-intensive applications has been unveiled by Nokia Siemens Networks. The company today announced that its Dense Wavelength Division Multiplexing (DWDM) platform will enable CSPs to seamlessly migrate existing 10 and 40 Gigabit per second (10G & 40G) optical networks to 400G with minimal investment. The hiT 7300 DWDM platform and TransNet for 400G optical transport networks will be available for delivery in the first quarter of 2011.

"Capacity demand in the backbone networks is increasing 60% per year," said Bernd Schumacher, head of Optical Networks at Nokia Siemens Networks. "As networks move from 10G to 100G optical transport, 400G is the next evolutionary step. Nokia Siemens Networks is ready to support this transition by enabling CSPs to start deploying 400G optimized optical networks."

The FlexGrid technology* incorporated in Nokia Siemens Networks' hiT 7300 DWDM platform** enables the migration to 400G networks by dynamically adapting the network's wavelength grid to the needs of high capacity channels. This is done using the network operator's existing fiber infrastructure and without causing any disruption in service. In addition, Nokia Siemens Networks' TransNet network planning tool allows service providers to plan and simulate the entire optical transport network to optimize the rollout while efficiently managing their network with the NetAct network management system. With these products, Nokia Siemens Networks not only ensures cost savings for operators but also improves their efficiency.

Published already in 2010!

Related info

Phone number has changed



Downloads

Press releases

14-06-2010 400G (English)
(PDF, 282 KB)

Nokia Siemens Networks & partners set data rate record for optical fiber

Capacity double that required for world's population to be on simultaneous phone calls

Nokia Siemens Networks, and a consortium of R&D partners, have successfully demonstrated a capacity record using light to transmit information down commercially deployed multi-mode optical fiber. The demonstration* achieved a 6-fold increase in optical data speed to 57.6 terabit per second (Tbps), compared to 9.6 Tbps speed available with today's commercial systems. The technique employed spatial multiplexing over solid-core multi-mode fiber. This capacity breakthrough has been recognized at the European Conference on Optical Communications (ECOC).

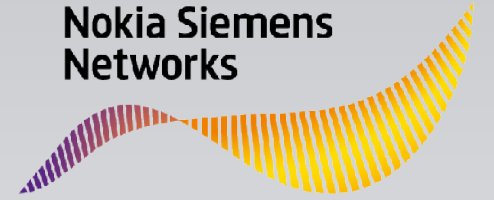
"With this record data rate we can transmit, over a single fiber, double the capacity required for 7 billion people – the world's population – to be connected over simultaneous phone calls," said Robert Richter, head of R&D optical networks at Nokia Siemens Networks. "But this is only the beginning. By 2020, we will be able to support 100 times this capacity, which means that a single fiber would have enough capacity to deliver 40 million different TV streams simultaneously."

Published in July 2012!

And now guess what happens if a radio astronomy project like SKA will make use of these high speed channels!



Nokia Siemens
Networks



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Let's do it together!

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