Improving the visibility of African research output through capacity building in digital libraries

Jens Vigen
European Organization for Nuclear Research

CERN-UNESCO School on Digital Libraries
28 November – 2 December 2016
Kwame Nkrumah University of Science and Technology
Prempeh II Library

THE EUROPEAN ORGANISATION FOR NUCLEAR RESEARCH (CERN) AND UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANIZATION (UNESCO) IN COLLABORATION WITH THE PREMPEH II LIBRARY, KNUST

CERN-UNESCO & PREMPEH II LIBRARY, KNUST

SCHOOL OF DIGITAL LIBRARIES

Topics include:

- Operation of Digital Libraries
- Open Source Software
- Web Technologies and APIs
- Operation of Institutional Repositories
- Open Access Principles

NOV 28 - DEC 2 2016

9:00AM

AMONOO-NEIZER CONFERENCE CENTRE KNUST - KUMASI

- *For further information, kindly contact:*
  school-digilibr@knust.edu.gh | school.digilibr@cern.ch
  or visit: school-digilibr.web.cern.ch/content/school-2016-kumasi-ghana

CERN

UNESCO
United Nations Educational, Scientific and Cultural Organization

CERN's mission

- **Research**
  - Seeking and finding answers to questions about the universe
- **Technology**
  - Advancing the frontiers of technology
- **Collaborating**
  - Bringing nations together through science
- **Education**
  - Training the scientists of tomorrow

https://jobs.web.cern.ch/content/our-mission


CERN
Science Bringing
Nations Together
UNESCO, October 1998

Distribution of All CERN Users by Nationality on 12 January 2016

MEMBER STATES	7319
Austria	106
Belgium	125
Bulgaria	88
Czech Republic	217
Denmark	56
Finland	102
France	858
Germany	1267
Greece	216
Hungary	79
Israel	63
Italy	1974
Netherlands	164
Norway	63
Poland	302
Portugal	113
Slovakia	111
Spain	399
Sweden	90
Switzerland	220
United Kingdom	706

ASSOCIATE MEMBERS		224
Pakistan	58	
Turkey	166	

OBSERVERS	2775
India	284
Japan	316
Russia	1071
USA	1104

STATES IN ACCESSION TO MEMBERSHIP	195
Cyprus	19
Romania	131
Serbia	45

OTHERS																	
Albania	4	Bosnia & Herzegovina	1	Ecuador	4	Kazakhstan	1	Malta	5	Qatar	1	Thailand					
Algeria	8	Brazil	135	Egypt	24	Kenya	2	Mauritius	1	San Marino	1	T.F.Y.R.O.M.					
Argentina	24	Cameroon	2	El Salvador	1	Korea, D.P.R.	4	Mexico	84	Saudi Arabia	1	Tunisia					
Armenia	27	Canada	154	Estonia	15	Korea Rep.	151	Montenegro	2	Senegal	1	Ukraine					
Australia	31	Central African Rep.	1	Georgia	44	Latvia	1	Morocco	13	Singapore	3	Uzbekistan					
Azerbaijan	11	Chile	20	Iceland	4	Lebanon	12	Nepal	7	Sint Maarten	1	Venezuela					
Bangladesh	7	China	421	Indonesia	10	Libya	1	New Zealand	6	Slovenia	27	Viet Nam					
Belarus	50	Colombia	38	Iran	54	Lithuania	30	Oman	1	South Africa	31	Zimbabwe					
Bolivia	2	Costa Rica	1	Iraq	1	Luxembourg	2	Palestine (O.T.).	7	Sri Lanka	3						
		Croatia	38	Ireland	20	Madagascar	4	Peru	6	Syria	1						
		Cuba	13	Jordan	8	Malaysia	18	Philippines	4	Taiwan	56						

1803

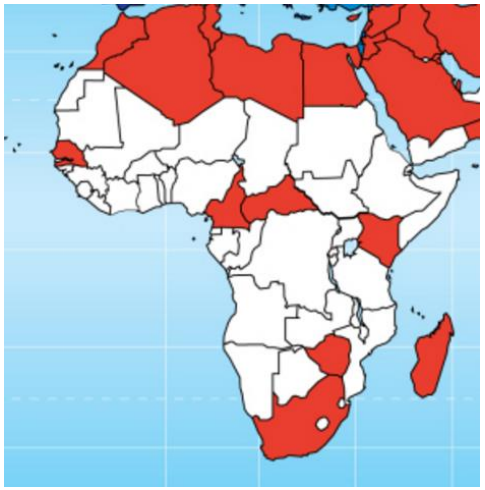
African Union delegation@CERN

Prof.Heuer, Director-General at the time, explaining the mysteries of the Universe

African CERN users

By nationality:

97 users from 14 countries



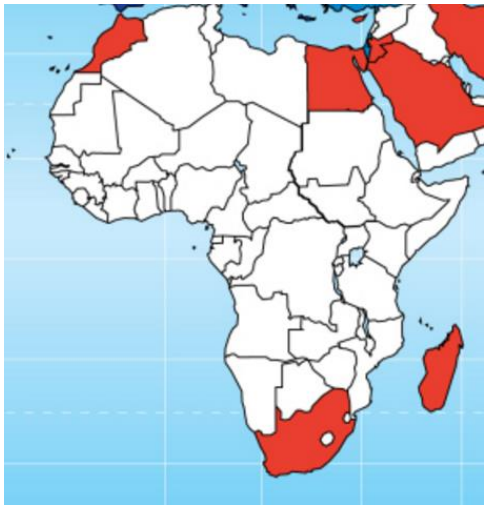
(2012: 66/12)

https://cds.cern.ch/record/2152388

by home institute:

83 users in 4 countries

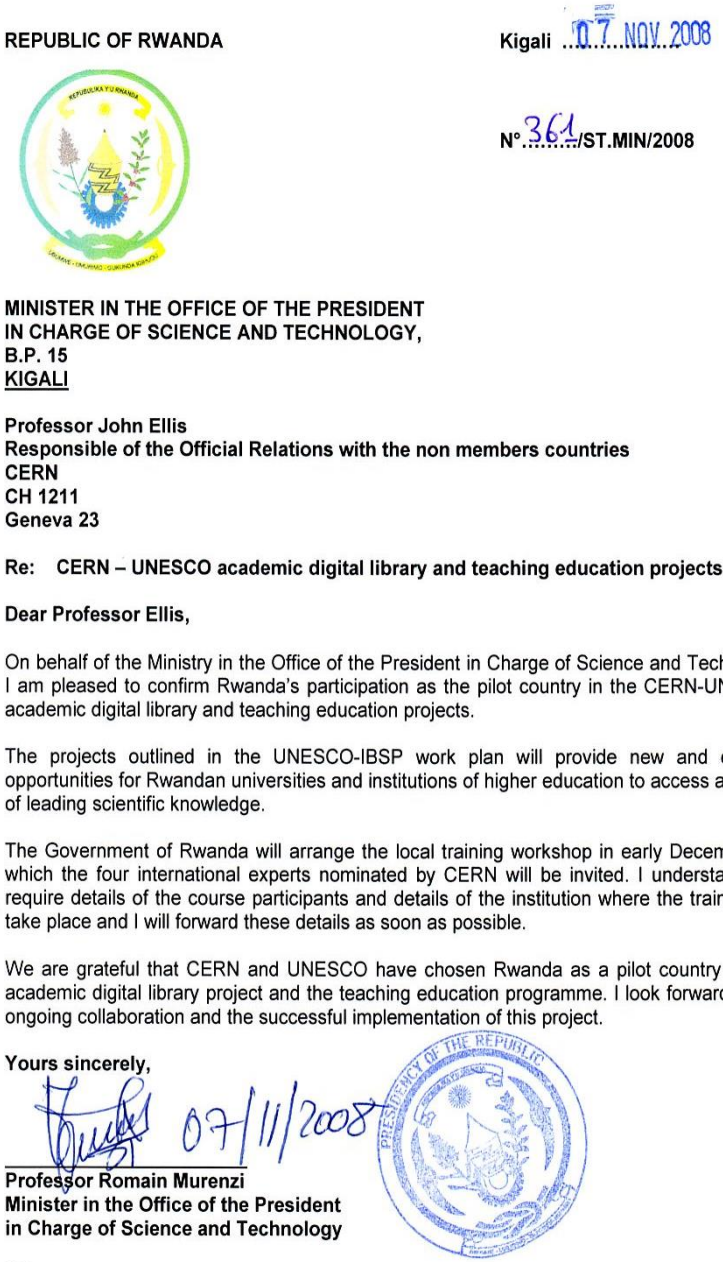
https://cds.cern.ch/record/2152387



Strong high-level African support:

"… will provide new and exciting opportunities for Rwandan universities …"

Prof. Romain Murenzi
minister of sci.&techn.



REPUBLIC OF RWANDA

Kigali ..07..NOV..2008

N°..361.../ST.MIN/2008

MINISTER IN THE OFFICE OF THE PRESIDENT
IN CHARGE OF SCIENCE AND TECHNOLOGY,
B.P. 15
KIGALI

Professor John Ellis
Responsible of the Official Relations with the non members countries
CERN
CH 1211
Geneva 23

Re: CERN – UNESCO academic digital library and teaching education projects

Dear Professor Ellis,

On behalf of the Ministry in the Office of the President in Charge of Science and Technology I am pleased to confirm Rwanda's participation as the pilot country in the CERN-UNESCO academic digital library and teaching education projects.

The projects outlined in the UNESCO-IBSP work plan will provide new and exciting opportunities for Rwandan universities and institutions of higher education to access a wealth of leading scientific knowledge.

The Government of Rwanda will arrange the local training workshop in early December, to which the four international experts nominated by CERN will be invited. I understand you require details of the course participants and details of the institution where the training will take place and I will forward these details as soon as possible.

We are grateful that CERN and UNESCO have chosen Rwanda as a pilot country for the academic digital library project and the teaching education programme. I look forward to our ongoing collaboration and the successful implementation of this project.

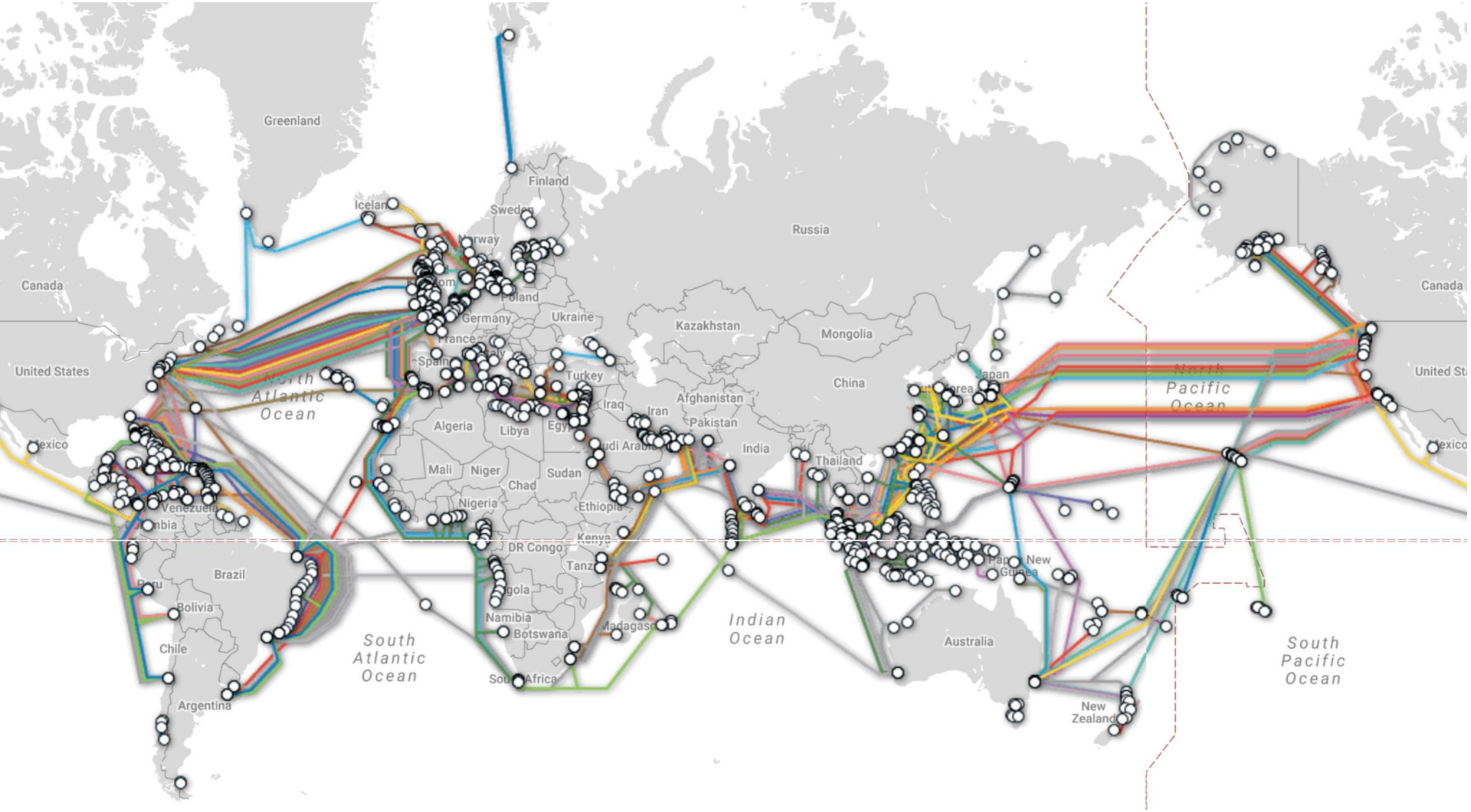
Yours sincerely,

07/11/2008

Professor Romain Murenzi
Minister in the Office of the President
in Charge of Science and Technology

CC:
- Director of Cabinet, Office of the President
- Director General ICT, Office of the President
  Kigali

The infrastructure is being put in place



[Submarine Cable Map]

CERN servers on their way to KNUST

Today these servers are used for scientific computing at NIMS

Prof. I. K. Dontwi and Prof. Rolf Heuer together with Peter Amoako-Yirenkyi and Frédéric Hemmer

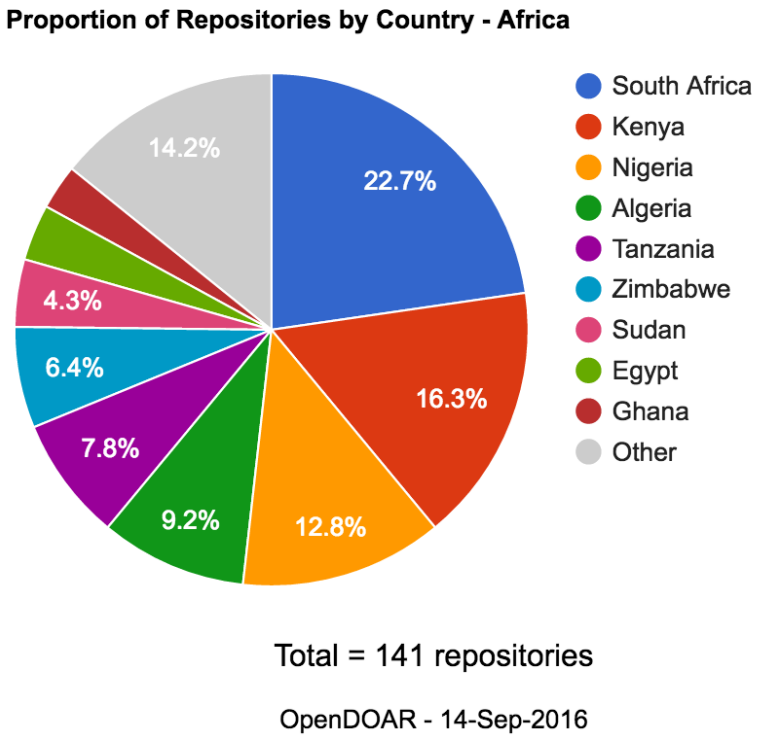
How is the information flowing?

Credit: FreePhoto

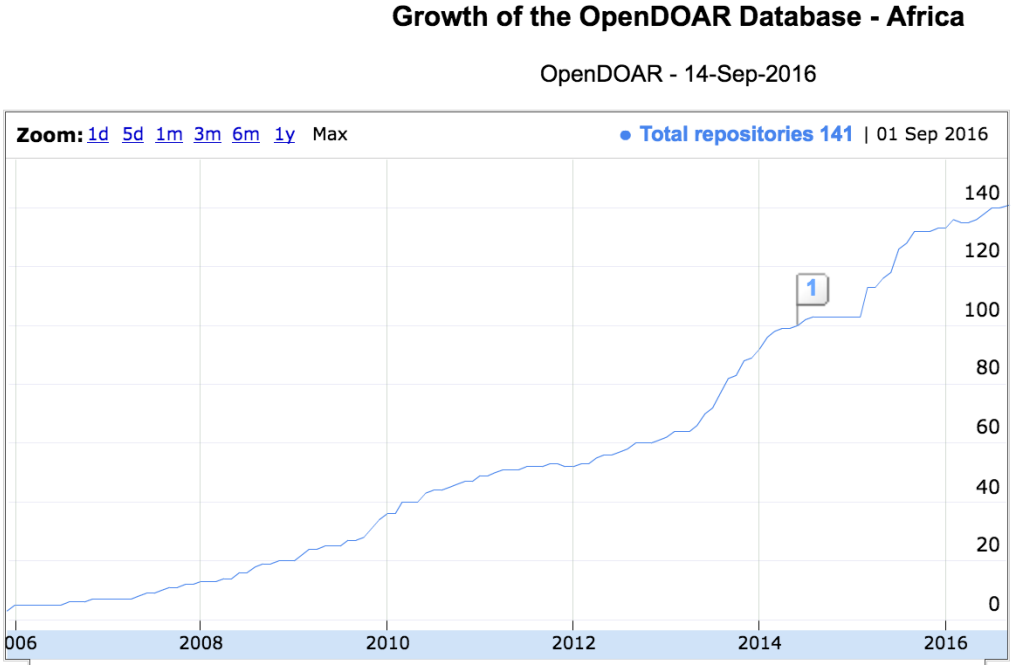
A one way flux does “only” require a good internet (which is important)

A real exchange of information requires digital libraries on both sides

Repositories in Africa (DOAR)

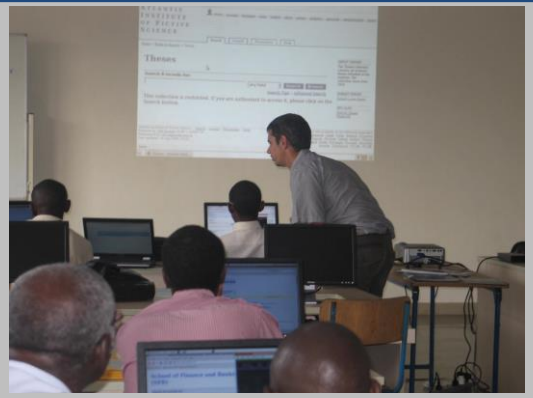


141 repositories in 22 countries



Steep growth, but still a lot to be done

The CERN-UNESCO School on Digital Libraries



- Improve the visibility of African research
  - The required technology exists
  - It is often a question of <u>developing policies</u> and <u>capacity building!</u>

1st school: KIST, Kigali, Rwanda, September 2009
2nd school: CNRST, Rabat, Morocco, November 2010
3rd school: CNDST, Dakar, Senegal, November 2011
4th school: KNUST, Kumasi, Ghana, November/December 2016

Participants from 22 countries so far

With the 2016 school marked in green

- ✓ Benin (3 participants)
- ✓ Burkina Faso (4)
- ✓ Cameroon (4)
- ✓ Ethiopia (1)
- ✓ **Ghana (15)**
- ✓ Guinea-Bissau (3)
- ✓ Guinea-Conakry (1)
- ✓ Ivory Coast (3)
- ✓ Kenya (2)
- ✓ Malawi (1)
- ✓ Mali (5)
- ✓ Mauritania (1)
- ✓ **Morocco (15)**
- ✓ Mozambique (1)
- ✓ Nigeria (2)
- ✓ **Rwanda (30)**
- ✓ **Senegal (23)**
- ✓ Seychelles (2)
- ✓ South Africa (2)
- ✓ Tunisian Republic (3)
- ✓ Uganda (4)
- ✓ Zimbabwe (2)

The school model

- ~ 30 participants
  - 1 IT specialist + 1 librarian from each country
  - 5-15 years of experience
- 4 trainers from CERN
- Informative lectures
- Hands-on training
  - installation and customization of Invenio
    - CERN's Open Source digital library software
- Situation reports from participating countries

School topics

- Introduction to digital libraries
- Open Access principles, copyright
- Open Access resources
- Metadata schemata: MARC, Dublin Core…
- Introduction to web technologies
- Introduction to information retrieval
- Operation of institutional repositories
- Maintenance of digital libraries
- Installation and configuration of a digital library

More new topics

- DOIs / permanent identifiers
  - Unambiguous referencing of research output
- ORCiD
  - Unambiguous association of research papers with authors
- Global subject repositories
- Wikipedia

Follow-up training

Here seen at the EPFL Library in Lausanne, Switzerland

CERN Bulletin report

- 4-6 participants invited for in-depth training at CERN
- Strong focus on the Invenio software
- Participation to the OAI conference

Developing the school further

- More previous school participants as trainers
  - e.g. experiences with repository installations
- Involvement of publishers (Elsevier)
  - Publishing trends, publisher initiatives, ethics…
- Involvement of African scientists
  - User needs and experiences
- TIND
  - Technical support for repository installation and maintenance

Libraries are the key to knowledge

In a scenario with no barriers, to access and disseminate scientific results; only then, we could take the full advantage of the scientific talents across the world.

The hinders are to be overcome!

Thank You!

jens.vigen@cern.ch

CERN

Accelerating science and innovation