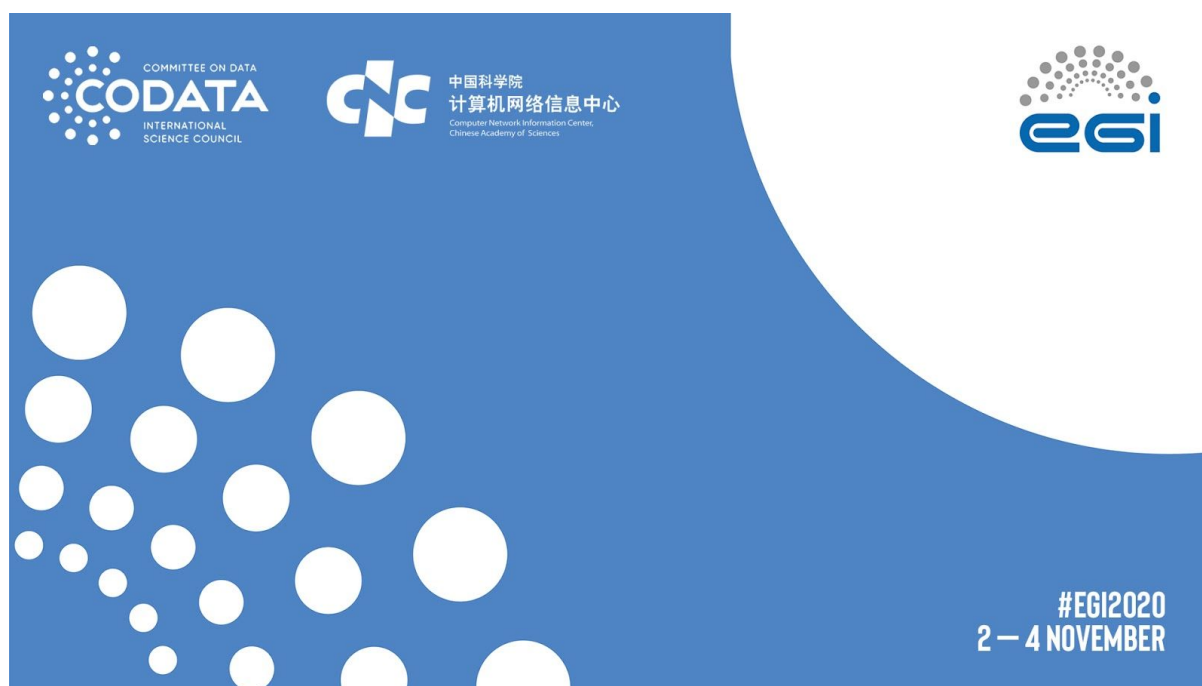# The Global Open Science Cloud Workshop
3rd - 4th November 2020

Agenda

GOSC Workshop committee

30th Oct 2020

Organizers:
Computer Network Information Center, Chinese Academy of Science, China
EGI Foundation, Netherlands
CODATA, ISC

Workshop page: *https://indico.egi.eu/event/5255/*
EGI Conference 2020: *https://indico.egi.eu/event/5000/timetable/#20201102*

General HouseKeeping

- Please make sure your microphone and video are deactivated unless the (co)host gives permission.
- Use the 'Raise Hand' function to ask to speak, you find the option in the "participants" list
- All presentations will be available on the conference and the workshop webpage.
- If you do not see all the Zoom buttons at the bottom of the Zoom window, move your mouse on that window and buttons will appear.
- Share your impressions and experiences on Twitter using #EGI2020 and mention @EGI_eInfra.

Introduction

The digital revolution has transformed the way in which data, information and knowledge are acquired, managed, repurposed, analysed, used and disseminated. We are at the threshold of an era with unprecedented opportunities for cross-disciplinary and cross-border collaboration for research and innovation. A new research paradigm is emerging which applies increasingly automated approaches and Machine Learning, and which harnesses the most advanced computing facilities and software, to handle huge and disparate cross-disciplinary data. The advanced infrastructure needed for this new paradigm and Open Science is emerging: it needs to be on demand, as a service, ubiquitous and seamless. In pursuit of this vision, infrastructures are beginning to emerge at institutional, national and regional levels, such as the show cases in European Open Science Cloud[1] from European Commission, the CSTCloud from Chinese Academy of Sciences[2], the ARDC[3] e-infrastructure in Australia, the African Open Science Platform[4], etc.

Is it possible to share experiences and make a global framework to align and federate such Open Science clouds and platforms? Is there a way to better support research collaborations across continents to resolve global science challenges, such as the UN Sustainable Development Goals (SDGs), climate change, infectious diseases and pandemics, COVID-19, coordinated and global disaster risk reduction, and so on? At the moment, a global, fully connected digital infrastructure is not in place, making it difficult for scientists to access digital resources across countries and continents.

The idea of a Global Open Science Cloud (GOSC) was agreed during the CODATA 2019 Beijing conference. The mission of GOSC is to connect different international, national and regional open science clouds and platforms to create a global digital environment for borderless research and innovation. It aims to provide better ways to harness digital resources from around the world, help bridge the division in infrastructure, technique and capacity building among different countries, support global science collaborations and foster truly international science.

There are many challenges and difficulties, i.e., inconsistent access policies from country to country; lack of common standards for building a global-level data and e-infrastructure federation; differences in language and culture; highly varied funding schemes, etc.

The workshop will gather representatives of international initiatives, research communities and public digital infrastructure providers, to review the existing work in GOSC, and to develop consensus about an initial concept model, framework, and roadmap for GOSC. We will discuss the needs and typical use cases from research community representatives, examine available resources and possible contributions from international e-infrastructure providers, identify the key barriers in policy, governance, standard and technique, and identify possible funding opportunities.

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[1] https://ec.europa.eu/research/openscience/index.cfm?pg=open-science-cloud
[2] http://www.cstcloud.cn/
[3] https://ardc.edu.au/
[4] http://africanopenscience.org.za/

We welcome all GOSC stakeholders to join and contribute to the discussion. We invite attendance by:

- Research community and research infrastructure representatives with needs and experience supporting global collaborations;
- Digital infrastructure representatives open to participating in a global resource federation;
- Experts on standards and technology developing and operating solutions for federated access to data, computing, software and applications;
- Policy researchers and policy makers who can identify the key policy barriers and provide plausible solutions;
- Funders who have the vision and interests of investment in the implementation of GOSC.

Workshop Agenda

Session 1: GOSC, the Concept and Preliminary Landscape (90min)

Time: 3 Nov 2020, Tuesday
- 11:15-12:45 CET
- 5:15-6:45 AM Eastern Time (US & Canada)
- 18:15-19:45 Beijing Time

Link for connection: https://us02web.zoom.us/j/84962553294 (password: **202011**)
Slido Audience access: https://app.sli.do/ (**59288**)

Description: The objective of this session is to review the existing work in Europe and globally, discuss the concept of GOSC, the landscape, and the roadmap.

Format: presentations (10min x 6) + discussion (30min)

Session Chair: Simon Hodson (Executive Director CODATA; Vice Chair, UNESCO Open Science Advisory Committee)

Presentations
- **Talk 1**: The UNESCO Recommendation on Open Science
  - **Speaker**: Ana Persic (Senior Programme Specialist, Chief of Section a.i.,UNESCO)

Dr Ane Persic is the Senior Programme Specialist, Division of Science Policy and Capacity-Building, Natural Sciences Sector, United Nations Educational, Scientific and Cultural Organisation

- **Talk 2**: International Science Council Action Plan and Open Science
  - **Speaker**: Geoffrey Boulton (Governing Board, International Science Council)

Geoffrey Boulton is Regius Professor of Geology Emeritus at the University of Edinburgh and former Vice-Principal of the University. He is immediate President of CODATA, is a member of the ISC Governing Board and the Advisory Council of the African Open Science Platform. He chaired the Science International Accord on Open Data in a Big Data World, the Royal Society report Science as an Open Enterprise, and a report for the African Science Granting Council Initiative on Open Science in Research and Innovation for Development in Africa. He chairs the imminent ISC report on Opening the Record of Science. He also chairs the Academic Advisory Council of the University of Heidelberg and is a member of the Strategic Council of the University of Geneva.

- **Talk 3**: The ISC CODATA Decadal Program: Making Data Work for Cross Domain Grand Challenges
  - **Speaker**: Simon Hodson (Executive Director CODATA; Vice Chair, UNESCO Open Science Advisory Committee)

Simon Hodson has been Executive Director of CODATA since August 2013. *Simon is an expert on data policy issues and research data management. He has contributed to influential reports on Current Best Practice for Research Data Management Policies and to the Science International Accord on Open Data in a Big Data World. He chaired the European Commission's Expert Group on FAIR Data which produced the report Turning FAIR into Reality https://doi.org/10.2777/1524. He is currently vice-chair of the UNESCO Open Science Advisory Committee, tasked with drafting the UNESCO Recommendation on Open Science, which is intended for adoption in November 2021. As a significant part of his CODATA role, Simon is tasked with preparing a major ISC and CODATA Decadal Programme on 'Making Data Work for Cross-Domain Grand Challenges', which will improve the coordination of specifications for data integration and interoperability for interdisciplinary research. Simon also contributes to the coordination of the CODATA Data Policy Committee. Additionally, Simon leads or participants in numerous projects, Working Groups and Steering Groups. In recent years, Simon has been a co-chair (2015-2018) of the GEO Data Sharing Working Group, to which CODATA has made a longterm contribution; co-chair of the OECD Global Science Forum and CODATA Project on Sustainable Business Models for Research Data Repositories; a member of the Board of Directors of the Dryad Data Repository (2012-2018), a not-for-profit initiative to make the data underlying scientific publications discoverable, freely reusable, and citable; Project Director, African Open Science Platform Project (2016-19); member of the Scientific Advisory Board of CESSDA ERIC, the European data infrastructure for the social sciences. Simon has a strong research background, as well as considerable project and programme management experience: from 2009 to 2013, as Programme Manager, he led two successful phases of Jisc's innovative Managing Research Data programme in the UK.*

- **Talk 4**: GOSC, landscape and vision
  - **Abstract**: This talk will present the landscape of existing work at global level and the preliminary GOSC vision and objectives
  - **Speakers**: Jianhui Li (CNIC, CAS), and Hussein Sherief (AASCTC)
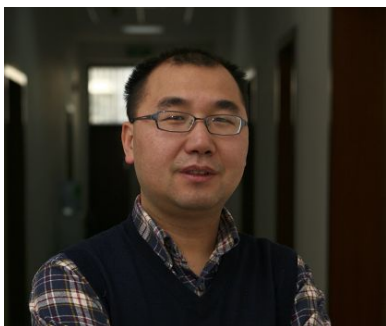
Li Jianhui is the director of Science and Technology Cloud Department at the Computer Network information Center (CNIC) of the Chinese Academy of Sciences (CAS), and a Professor at the University of Chinese Academy of Sciences (UCAS). He obtained Ph.D. degree on computer science from the Institute of Computing Technology of CAS in 2007. He spent over 15 years in the research of scientific data management, data-intensive computing and big data analysis. he led the design and development of CAS scientific data infrastructure and open data cloud. In 2016, He founded "China Scientific data", which is the first open access data journal for scientific data publication in China. Currently, he is leading the design, development and operation of CSTCloud (China Science and Technology Cloud), which is the national level open science platform. He also serves as the CODATA vice president and actively engage in open data and open science international cooperation.
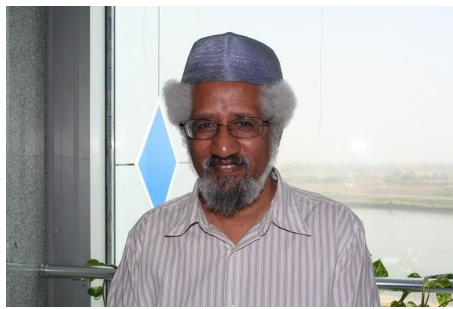
Hussein Sherief is Director of Almaahad Almutagadem Specialized Computer Training Center (AASCTC) and represents AASCTC in CODATA and ITU. He was Lecturer at International African University and Sudan University of Science and Technology. He has been Principal Adviser Ministry of Science and Technology of Sudan.

- **Talk 5**: From EOSC out: sharing lessons and co-building a global open research commons
    - **Abstract**: This talk will reflect on progress made towards a European Open Science Cloud (EOSC) from an Executive Board perspective. Common challenges which need to be pursued in global fora will be explored to discuss how EOSC is looking out to global peers and seeking to co-build an interoperable set of services and data which facilitate collaboration across disciplinary and geographic boundaries.
    - **Speaker**: Sarah Jones, EOSC Engagement Manager, EOSC Executive Board


Sarah Jones is EOSC Engagement Manager at GÉANT, where she will work with NRENs on supporting Open Science. She is an information professional with over a decade working in research data services in the higher education sector. Sarah was rapporteur on the European Commission's FAIR Data Expert Group and and is an independent expert on the EOSC Executive Board where she chairs the FAIR Working Group.

- **Talk 6**: Coordination of global activities on the development of Open Science platforms - the RDA Global Open Research Commons (GORC) IG
    - **Abstract**:The so called "Open Science Commons" or "Data commons" provide a shared virtual space or platform that provides a marketplace for data and services. Examples include the European Open Science Cloud, the Australian Research Data Commons, the African Open Science Platform, open government portals and initiatives outside traditional research contexts. Coordinating across these initiatives to enable a network of interoperable data commons is the goal. The Interest Group works to reach a shared understanding of what a "Commons" is in the research data space; what functionality, coverage and characteristics does such an initiative require and how can this be coordinated at a global level. Collaborations will be sought with parallel initiatives in other spaces, whether in national / regional contexts

or in other fora such as the OECD, G7 Open Science Working Group, UN's Expert Advisory Group on a Data Revolution for Sustainable Development, CODATA, GO-FAIR and others. Recognising the broad scope, the IG will focus initially on Data Commons and extend to Open Science Commons as work progresses.

- **Speaker**: Corina Pascu (Co-Chair of RDA GORG IG, Policy Officer of European Commission)
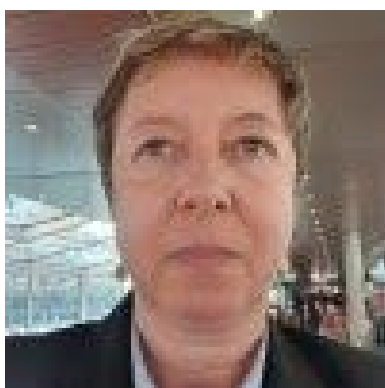
Corina Pascu has more than 30 years experience in EU affairs. She is currently working with European Commission DG Research and Innovation, on the formulation of European Open Science policies and Open Science diplomacy (EC expert and co-chair of G7 Open Science Working Group and correspondent in DG R&I for G20/G7 on Open Science). She is acting as a co-chair of the Research Data Alliance (RDA) Interest Group on Coordinating the Global Open Research Commons IG). She has worked previously on policy advice and analysis with EU's Science Hub on the social and economic implications of ICTs, provided consultant services for the World Bank in the area of digital innovations and advised the European Commission on digital innovations and policies for innovative tech startups and investments.

Corina will present the work in the RDA Global Open Research Commons (GORC) IG in the Global Open Science Cloud Workshop, 04 November.

Panel Discussion: (40mins)
The discussion will be driven by the following questions to the panel and the audience
- ❏ *What is the vision of GOSC, the concept, scope?*
- ❏ *What are the main challenges?*
- ❏ *What should be on the GOSC Landscape?*
- ❏ *What should GOSC do and how should it go about it?*

Lunch Break: 30min

Session 2: Research Communities and Co-Design of GOSC (90min)

Time: 3rd Nov 2020, Tue
- *13:15-14:45 CET*
- *7:15-8:45AM Eastern Time (US & Canada)*
- *20:15-21:45 Beijing Time*

Link for connection: https://us02web.zoom.us/j/84962553294 (password: **202011**)

Slido Audience access: https://app.sli.do/ (**59288**)

Description: The objective of this session is to discuss the co-design of GOSC, such that it is developed with international research communities and to meet their objectives.

International scientific communities are invited to discuss their global collaboration(s), challenges and requirements for GOSC.

Format : lightning talks for international science collaboration + panel
- Overview by the Chair (1x 5min)
- Lightning talks by community representatives (6 x10 min total 55mins)
- Panel discussion (20 mins)

Session Chair: *Jianhui Li (Director of CSTCloud, CNIC, Chinese Academy of Sciences (CAS))*

Presentations
- **Talk 1:**Global Science Collaboration in ESFR
  - **Speaker**: Rudolf Dimper, IT Advisor to the European Synchrotron Radiation Facility (ESRF) Directorate

Rudolf Dimper *is working since the late 80s at the ESRF, the leading high-energy synchrotron in Grenoble France. He has occupied a number of different positions, among which during 19 years Division Head and member of the ESRF Directorate.*

- **Talk 2- part 1:** *Global EISCAT* (7min)
  - **Speaker**: I*ngemar Häggström (Head of Operation, EISCAT)*

Dr Ingemar Häggström, *is the Head of operations, EISCAT Scientific Association*

EISCAT is running the only incoherent scatter radars in Europe for atmospheric and geospace research. A new system, the imaging radar EISCAT_3D, and are now being built. For these, a data portal have been developed within a Competence Centre of EOSC-hub,

utilising several services provided by the EGI Cloud Federation. The EGI Check-in have been enhanced to identify EISCAT prime users and the portal, built on DIRAC4EGI, support a controlled access to distributed storage with analysis applications in high-performance compute cloud environments.

Here we present EISCAT and EISCAT_3D in the global scale of geospace research, and how scientists can interact with and access the resources of the infrastructure. This involves interchanges with similar radar facilities around the world and a system for setting up a common (meta)data federation, federated processing and data movements.

- **Talk 2 - part 2:** Potential collaboration and challenge between SYISR and EISCAT (7min)
  - **Abstract:**EISCAT is a multiple Incoherent Scatter Radar (ISR) system in Europe and has played a significant role in the space physics community in the past decades. Recently, they are planning to update the system and named EISCAT-3D. Sanya ISR (SYISR) is an ISR under development over low latitude China and almost completed. At the same time, we are turning to the development of SYIRS phase 2, which will double SYISR and build two other remote receivers. Both EISCAT-3D and SYISR Tristatic System use phased array antennas and will generate huge amounts of scientific data. Scientifically, these two ISRs will complement each other due to the geographic location difference. In the talk, I will generally describe both the radar system, the potential collaboration in the future, and also the main challenges.
  - **Speaker**: *Xinan YUE (Institute of Geology and Geophysics, CAS)*

Dr Xinan Yue is a research Professor in the Institute of Geology and Geophysics, Chinese Academy of Sciences. His scientific interests include ionospheric/thermospheric modeling, data assimilation, GNSS applications, remote sensing, and space weather. He has published nearly 130 SCI papers as either first author or co-author in related fields. He is now leading the development of Sanya Incoherent Scatter Radar (SYISR) Tristatic System over low latitude China.

- **Talk 3:** Regional collaborations on Disaster Mitigation
  - **Speaker**: Eric Yen, Research Scientist in Academia Sinica Grid Computing Centre (ASGC) , Taiwan

Eric Yen is a research scientist in Academia Sinica Grid Computing Centre (ASGC) in Taiwan. His research interests covers mainly distributed computing infrastructure and technology, cloud computing, and system efficiency optimization. He also involved in several regional and international collaborations on e-Science and e-Infrastructure, resource sharing and federation, digital archives and system integration

- **Talk 4:** Virtual Observatory and Science Platforms in Astronomy
  - **Abstract:** The Virtual Observatory (VO) aims to provide a research environment that will open up new possibilities for scientific research based on data discovery, efficient data access, and interoperability. In the talk, the basic concept of the VO and current status of the IVOA will be introduced. As a whole life-cycle data management science platform, several examples will be given including NADC (China), NOAO Data Lab (US), CANFAR (Canada) and SciServer (US).
  - **Speaker:** Chenzhou CUI (The PI for Chinese Virtual Observatory (China-VO) and the chair for International Virtual Observatory Alliance (IVOA), the deputy director of National Astronomy Data Center in China (NADC))

Chenzhou Cui is Principle Investigator at the Astroinformatics Research Group of the National Astronomical Observatories, Chinese Academy of Sciences (NAOC) and Deputy Director of NAOC. His research interests include Astro-Informatics, Virtual Observatory, data-driven education and public outreach, Cloud Computing, Big Data, Grid technology, astronomical databases, data processing and analytics, Galactic Structure and Evolution, and Stellar Abundance.

- **Talk 5:** Big Data Analytics needs for the Earth Observation Science Community
  - **Abstract:** Earth Observation (EO) data from open access sensors, such as those from the European Copernicus Sentinel fleet, are streaming in at rates of multiple Terrabytes per day. Comprehensive processing of these data streams, their analysis and integration into scientific maritime and land disciplines requires adoption of Big Data Analytics. EO use cases cover a wide range of data processing patterns across varying access profiles and have long term data curation requirements. Effective uptake relies on Petabyte-scale storage solutions coupled with massive parallel processing and access to efficient, state-of-the-art geospatial data analysis routines. Open cloud solutions are expected to make major contributions in providing consistent long term storage, facilitate rapid on-demand data staging and marshalling advanced compute resources to apply open source algorithms. However, uptake of cloud solutions in science also requires efforts in education in order to apply scalable and reproducible science methods in disciplines that are beyond the "space data" domain.
  - **Speaker:** Guido Lemoine, Joint Research Centre (JRC), European Commission), international EO data sharing for evidence-based policy making, e.g. in Agriculture

Guido Lemoine is a senior scientist at the European Commission's Joint Research Centre (Ispra, Italy). He works on the integration of high resolution Copernicus Sentinel data in operational land applications and the related Big Data Processing and Analysis technologies and platforms. One of his objectives is to stimulate wider uptake of Earth Observation data in science disciplines beyond the Space domain by contributing to open science cloud initiatives.

- **Talk 6: Supporting global open science with Collaboration in Geoinformatics**
  - **Speaker**: Kerstin Lehnert (Doherty Senior Research Scientist at the Lamont-Doherty Earth Observatory of Columbia University, Director of the NSF-funded data facility IEDA (Interdisciplinary Earth Data Alliance))

Kerstin Lehnert is Doherty Senior Research Scientist at the Lamont-Doherty Earth Observatory of Columbia University and Director of the Lamont Geoinformatics Research Group. Kerstin holds a PhD in Petrology from the University of Freiburg in Germany. Over the past 15 years, her work has centered on the development of community-driven data infrastructures for the solid Earth sciences and, in particular, on using cyberinfrastructure to improve access and sharing of Earth and space science data in 'small data' communities and of physical samples. Kerstin is a member of the Board of Directors of the American Geophysical Union; of the Data Archive & Access Requirements Working Group of NOAA's Science Advisory Board; of the Division Committee of the US National Academies for Science, Engineering, and Medicine's Gulf Research Program; and president of the IGSN e.V.. She is a past member of the NSF Advisory Committee for Cyberinfrastructure, past Chair of the EarthCube Leadership Council, and past President of the Earth and Space Science Informatics Focus Group of the American Geophysical Union.

Panel Discussion: *(20min)*
- ❏ Who is interested and what are the benefits from GOSC?
- ❏ What are the community's needs for GOSC?
- ❏ What are the main functions for the GOSC? What are the big challenges for GOSC from your own research community and your experiences?

Session 3: Global e-Infrastructures: Challenges and Opportunities in Achieving the GOSC Vision (90min)

Time: 4 Nov. Wed
- *11:15-12:45 CET*
- *5:15-6:45 AM Eastern Time (US & Canada)*
- *18:15-19:45 Beijing Time*

Link for connection: https://us02web.zoom.us/j/86726802785 (password: `202011`)

Slido Audience access: https://app.sli.do/ (**59288**)

Description: The objective of this session is to consider how existing e-Infrastructure resources can participate and support GOSC. International e-Infrastructure providers are invited to discuss their challenges in the international collaboration efforts (i.e., service provision, community support, standards in use), and identify challenges to this collaboration that might be addressed through GOSC.

Format :
- Overview by the Chair (1x 5min)
- Lightning talks by e-Infrastructure providers (6x10min)
- Panel (25mins)

Session Chair: Mark Dietrich (EGI Foundation)

Presentations
- **Talk 1:** African Infrastructure for GOSC: Challenges and Opportunities (Gold and Diamonds)
    - **Speaker:** Happy Sithole, (Centre Manager: National Integrated Cyber-Infrastructure System (NICIS), South Africa)

Dr Happy Sithole is the Centre Manager for the South African cyberinfrastructure (CI) system, NICIS since 2019. He is responsible for the coordination of this system so that it meets the demands of the South African National System of Innovation, in support of the Department of Science and Innovation. This involves the three main entities of the CI, Centre for High-Performance Computing (CHPC), South African National Research Network (SANReN), Data Intensive Initiative of South Africa (DIRISA).

Prior to becoming the CI centre manager, Sithole spent 12 years as the director of the Centre for High Performance Computing. He completed his PhD in materials science, focusing on electronic and atomistic simulation of iron sulphides, at the University of Limpopo, where he also lectured for nine years. He has applied high-performance computing to solve problems in mining industries and nuclear power plant designs, such as at his time at the Pebble Bed Modular Reactor. Sithole also sits on the steering committees of high-performance computing meetings in Germany, Russia and Singapore. He was the Chairperson of the ICT Committee of the National Library Board and is currently a board member at the Centre of Excellence for Nuclear Safety and Security (CNSS) in South Africa.

- **Talk 2:** The ARDC's Nectar Research Cloud: Challenges and Opportunities for the GOSC
  - **Abstract:** The Australian eResearch infrastructure landscape is complex, spanning multiple organisations that provide: discovery, analysis and curation tools; national information infrastructure services, such as identifiers; outreach, training, support, advice, consultation and policy; as well as the necessary underpinning infrastructure. The ARDC contributes to a number of these areas, including cloud compute infrastructure through the Nectar Research Cloud. The ARDC Nectar Research Cloud operates on a federated model across multiple organisations and state jurisdictions, which presents a number of cultural, legal and technical challenges for accessing and sharing data. This presentation will consider how the ARDC Nectar research cloud can be viewed as a local model for a global cloud structure, and outlines some of the ways the ARDC is working to address these issues and the various opportunities for contributing to the Global Open Science Cloud.
  - **Speaker:** Rosie Hicks (CEO of ARDC)

Rosie Hicks is the Chief Executive Officer of the Australian Research Data Commons (ARDC). The ARDC is a transformational, sector-wide initiative enabled by the Australian Government's National Collaborative Research Infrastructure Strategy (NCRIS) to provide Australian researchers with competitive advantage through data. The ARDC's mission is to accelerate research and innovation by driving excellence in the creation, analysis and retention of high-quality data assets.

Rosie has expertise and extensive knowledge of the Australian research infrastructure sector, and leadership experience as the former CEO of the Australian National Fabrication Facility (ANFF). Her career, spanning Japan, UK and Australia, includes every aspect of scientific instrumentation from product development and technical marketing to the management of multi-user facilities, working in environments that cross academic and industry domains.

- **Talk 3: Research e-infrastructure federation in China**
  - **Speaker:** Lili ZHANG (International Project Manager, CSTCloud Department, CNIC, CAS)

Zhang Lili is a research scientist at the Computer Network Information Center of Chinese Academy of Sciences and also a member of CODATA International Data Policy Committee. Her research focuses on open data and open science policy, practice; information economics.

- **Talk 4**: Open Science in the Context of the Globalizing World
  - **Abstract**: Digital transformation is stimulating research towards a more collaborative, global and open ecosystem, shifting the new paradigm of science towards openness, participation, transparency, and social impact. Even though this shift has started a few years already, it is still unclear how we can take and sustain it at the global level as we are missing consensus on essential elements of the ecosystem, and specifically on the connecting elements. We are asking researchers to share, but this will only happen if we develop the right environment for them with incentives and services. This presentation focuses on how OpenAIRE is building bridges within Europe and with regional infrastructures around the world to bridge scholarly communication initiatives, by sharing and putting forward best practices on policy and services, by assisting communities to develop with open science in their core, by enabling all actors across the research spectrum to commit to local infrastructure, and by putting the connecting elements for a global effect.
  - **Speaker**: Natalia Manola, Managing Director, OpenAIRE; Member of EOSC Executive Board

Natalia Manola is the Managing director of OpenAIRE (www.openaire.eu), a pan European e-Infrastructure supporting scholarly communication and open science in Europe. Natalia holds a Physics degree from the University of Athens, and an MS in Electrical and Computing Engineering from the University of Wisconsin at Madison and has worked for several years as a Software Engineer and Architect in the Bioinformatics commercial sector. She has expertise in Open Science policies and implementation, and she currently serves in the EOSC Executive Board, and has served in the Open Science Policy Platform, an EC High Level Advisory Group provide advice about the development and implementation of open science policy in Europe.

- **Talk 5:** EGI experience in supporting international scientific collaborations
  - **Speaker:** T. Ferrari (Director, EGI Foundation)

Tiziana is Director at the EGI Foundation. Since January 2018, she is project coordinator of EOSC-hub, the EC funded project bringing together an extensive group of national and international service providers and research infrastructures to create the EOSC Hub: a central contact point for European researchers and innovators to discover, access, use and reuse a broad spectrum of resources for advanced data-driven research. Tiziana was formerly Chief Operations Officer of EGI, taking care of the operations coordination of the technical infrastructure, one the largest computing platforms for research in the world. She is an expert in international research governance, distributed computing and high-performance data analytics solutions. Tiziana holds a PhD in Electronics and Data Communications Engineering from the Universita' degli Studi in Bologna.

- **Talk 6**: Global Open Science -- challenges and opportunities for global networks
  - **Speaker**: Erik Huizer (CEO, GÉANT)

E*rik Huizer* *is Chief Executive Officer at GÉANT, the pan-European data network for the research and education community. He was previously the Chief Techonology Officer at SURFnet, and a part-time professor of Internet Applications at University of Utrecht. He also serves on the ICANN strategy panel on the Internet Governance Ecosystem, and is a chair or member of various Information and Communication Technology research boards in the EU and the Netherlands.*

Panel Discussion (25min)
- ❏ *What are the common opportunities for working with a GOSC*
- ❏ *What are the common challenges for international cooperation that GOSC can help with?*

Lunch Break: 30mins

Session 4: Realizing the Vision of GOSC (90min)

Time: 4 Nov Wednesday,
- *13:15-14:45 CET*
- *7:15-8:45AM Eastern Time (US & Canada)*
- *20:15-21:45 Beijing Time*

Link for connection*: https://us02web.zoom.us/j/86726802785 (password: **202011**)*

Slido Audience access: https://app.sli.do/ (**59288**)

Description: Summary of main points in previous session. Funding bodies (EC, CAS, US) are invited to give information about funding opportunities. Based on these, the discussion will focus on the next step priorities for different stakeholders.

Format: presentations + discussion
- Overview by the Chair (1x 5min)
- Lightning talks by Funders (3x10min)
- Mini panel with international funding agencies (15min)
- Panel (40mins)

Session Chair: Tiziana Ferrari (Director, EGI Foundation)

Presentations (*30min)*

- **Talk1:** Introduction to Chinese Academy of Sciences International Cooperation and GOSC
  - **Speaker**: Prof. Yan ZHUANG (Division Director, Bureau of International Cooperation, Chinese Academy of Sciences)

Pro. ZHUANG Yan is Director of International Organization Affairs, Bureau of International Cooperation, Chinese Academy of Sciences. The division is responsible for managing affairs related to international organizations including important collaborative projects, conferences, training workshops, etc (www.bic.cas.cn/jgsz/gcsznjs/gjzzc/). Most seed money (previous conferences, trainings) and collaborative funding we received from the CAS for starting GOSC were coordinated by this division.

- **Talk 2:** EC support to the European Open Science Cloud and perspectives on international cooperation
  - **Speaker:** Kostas Glinos (European Commission, Head of Unit for Open Science)

Kostas works at the European Commission, leading the unit in charge of Open Science in the directorate general for Research & Innovation. Prior to this he held various management positions related to STI policy and R&D funding programmes, including international relations, research infrastructures, cyber-physical systems, future and emerging technologies and big research data. In the academic year 2017-2018 he was a Fellow at the Lee Kuan Yew School of Public Policy at the National University of Singapore.

Before joining the Commission in 1992 Kostas worked in the chemical industry in the USA and Belgium, lectured at the University and carried out research. He holds a PhD in engineering from the University of Massachusetts and an Advanced Professional Certificate in investment management from Drexel University

- **Talk 3:** Perspectives on open science and open data from the US National Science Foundation
  - **Speaker:** *Manish Parashar (Director, Office of Advanced Cyberinfrastructure (OAC) National Science Foundation)*

Manish Parashar *is currently serving as Assistant Director for Strategic Computing at the Whitehouse Office of Science and Technology Policy (OSTP), where he is leading strategic planning for the Nation's Future Advanced Computing Ecosystem. He is also on an IPA to the US National Science Foundation (NSF) since February 2018 where he is the Office Director of the Office of Advanced Cyberinfrastructure (OAC). At NSF he oversees investments in the exploration development, acquisition and provisioning of state-of-the-art national cyberinfrastructure resources, tools, services and expertise essential to the advancement and transformation of all of science and engineering. He is also leading the development of NSF's strategic vision for a National Cyberinfrastructure Ecosystem for 21st Century Science and Engineering that responds to rapidly changing application and technology landscapes, as well as blueprints for NSF's key cyberinfrastructure investments over the next decade. He also serves as the NSF representative for the US National Strategic Computing activities led by the Whitehouse Office of Science and Technology Policy (OSTP), and served as co-chair of the Fast Track Action Committee (FTAC) that developed the report titled National Strategic Computing Update: Pioneering the Future of Computing.*

Manish Parashar is Distinguished Professor of Computer Science at Rutgers, The State University of New Jersey University. He is also the founding Director of the Rutgers Discovery Informatics Institute (RDI2) and The Applied Software Systems Laboratory (TASSL), Full Member (Clinical Investigations and Precision Therapeutics Program) of the Rutgers Cancer Institute of New Jersey, and is Associate Director of the Rutgers Center for Information Assurance (RUCIA). He is also Visiting Professor in the Faculty of Business, Computing & Law at University of Derby, UK. Before joining NSF, he led the design, development, deployment, and Operations and Maintenance as Lead PI for Cyberinfrastructure for the NSF Ocean Observatories Initiative. He also co-led the Discovery Science Spoke of the NSF Northeast Big Data Hub.

Mini Panel: *(15mins)*
- *Q&A to Funders and short panel discussion*

Panel: (40mins) Simon, Jianhui, Mark

- *Summary of key findings on challenges and opportunities for a Global Open Science Cloud initiative*
- *Gaps to be addressed in policies and governance for data and service sharing*
- *Gaps to be addressed in technical interoperability and data sharing*
- *The role of RDA and the CODATA decadal programme*
- *Next actions*