

Terms of Reference for Digital Belt and Road Program (DBAR)

1 Preamble

The Digital Belt and Road Program (DBAR) was set up in 2016 following a wide consultation with the Earth observation community. DBAR aims to deal with the digital divide in our understanding of Earth systems towards supporting the United Nations 2030 Agenda for Sustainable Development.

This document defines the “Terms of Reference” for different bodies within DBAR to provide a broad framework of interaction within the program to fulfill collective and individual responsibilities.

2 Vision

- 2.1** The vision of DBAR is to advocate the integration of big Earth data applications by the year 2025 in the design and planning of development, environmental protection, and resource management activities undertaken within the Belt and Road initiative (BRI) at local, national, regional, and international scales to enable countries of the Belt and Road region to sustainably develop and fulfill their national and international obligations to implement the SDGs. The Program will support the commitment of BRI to promote a science and technology-based development framework in partner countries.
- 2.2** The DBAR vision will promote international cooperation on Earth observation, big data, and digital technology for Earth science, and put the application of these technologies within reach of policy- and decision-makers facing environmental and societal challenges, thus facilitating the attainment of the Sustainable Development Goals (SDGs) in the Belt and Road region.

3 Mission

- 3.1** The DBAR mission is to build a plurality of partnerships engaging the public and stakeholders to design, develop and implement demonstration projects that illustrate the value of big Earth data applications for attaining sustainable development goals (SDGs). The DBAR will also promote technology transfer and capacity building to raise the overall levels of big Earth data expertise among countries within the Belt and Road region.

4 Governance

- 4.1** DBAR has set up the following “bodies” to govern the program:
- a) DBAR Science Committee
 - b) DBAR Secretariat
 - c) DBAR Working Groups
 - d) DBAR Task Forces
 - e) DBAR International Centers of Excellence

5 DBAR Science Committee

- 5.1** The official name of the committee is the “Digital Belt and Road Program Science Committee”, in short DBAR Science Committee, and hereinafter Science Committee (SC).
- 5.2** The Science Committee is the highest authority of DBAR, determining the Program’s general policy and overseeing its managerial and research operations.
- 5.3** More specifically, the Science Committee shall have the mandate to:
- a) Define and modify performance criteria for other bodies within DBAR, including Working Groups, International Centers of Excellence, and Task Forces.
 - b) Guide DBAR on matters related to scientific research and international scientific collaboration.
 - c) Identify and modify core objectives and research priorities for DBAR Working Groups.
 - d) Review and approve strategies developed by different DBAR bodies.
 - e) Review and approve annual progress reports from different DBAR bodies.
 - f) Develop criteria for internal and external evaluations.
 - g) Review and approve applications for new DBAR Working Groups, Task Forces, and International Centers of Excellence.
 - h) If and where needed, modify the system of DBAR Working Groups, Task Forces, and International Centers of Excellence within DBAR.
- 5.4** The Science Committee shall be composed of renowned international experts in the fields of Earth science, information science, space science, data science, and related applications within the domain of sustainable development. The committee will represent extensive experience in scientific and policy research, policy development, and decision support systems, serving within private or public enterprises around the world.

6 DBAR Secretariat

- 6.1** The DBAR Secretariat is established to provide management and support services to all bodies of DBAR under the supervision of the Science Committee.

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- 6.5** The Secretariat under the supervision of the Secretary-General with the support of the Deputy Secretary-General shall have the responsibility to:
- a) Ensure and maintain effective communication between the Science Committee, Working Groups, Task Forces, and International Centers of Excellence.
 - b) Carry out daily management and communication operations for the proper function of the DBAR Secretariat.
 - c) Develop a comprehensive database of institutions and organizations within the Belt and Road region committed to pursuing the SDGs, and those within the international big data research community.
 - d) Ensure international visibility of DBAR by maintaining updated information on the DBAR website and other relevant physical and digital media outlets.
 - e) Take the lead in organizing DBAR events and the annual DBAR international conference.
 - f) Provide all possible support to the Science Committee in organizing and documenting meetings, and proceedings of their internal or external engagements when requested.

7 DBAR Working Groups

- 7.1** DBAR Working Groups are collaborative networks committed to planning, organizing, and reporting research in their specific pre-defined domains focusing on Earth observation big data to promote science, technology, and innovation towards the SDGs.
- 7.2** Working Groups are also mandated to carry out capacity development, technical/policy advisory services, and scientific outreach and collaboration.
- 7.3** Working Groups shall, in consultation with the Science Committee, have the responsibility to:
- a) Secure scientific funding from both national and international sources for their research activities, events, and meetings.
 - b) Develop the technical, material, human, and digital resources necessary for scientific analysis and research within their domain.
 - c) Develop and foster national and international partnerships and collaborations to promote development of science and technology within their domain.
 - d) Explore and promote cross-disciplinary research between DBAR Working Groups and other national or international research bodies to promote comprehensive research on SDGs and associated targets and indicators.
- 7.4** Working Groups shall work to carry out the core mission of DBAR. They shall

continue to operate and conduct research within the scope and mission of DBAR unless and until explicitly dissolved, merged, or modified by the Science Committee.

- 7.5 Each Working Group will develop a strategic plan that provides a detailed approach to how the Working Group will implement its enumerated tasks. Progress on the implementation of each strategic plan will be compiled on an annual basis and reviewed periodically by the Science Committee and DBAR Secretariat.

8 DBAR Task Forces

- 8.1 DBAR Task Forces are special groups approved by the Science Committee to focus on specific research or technical challenges related to the vision of DBAR and may incorporate activities related to research, academic, or technical/advisory services. They shall be time-bound as determined by the Science Committee or funding agency supporting the activity, or until the completion of its stated and well-defined objectives.
- 8.2 New Task Forces shall be established on recruitment by the Science Committee, with a short-term mission.

9 DBAR International Centers of Excellence

- 9.1 DBAR International Centers of Excellence (ICoE) have been set up to promote academic exchange, scientific interactions, and collaborations and to facilitate data and information sharing.
- 9.2 An ICoE shall, in collaboration with Working Groups, work to:
- a) Develop projects and reports on areas relevant to the DBAR vision and mission.
 - b) Take the lead to identify and highlight broader regional policy challenges in implementing digital solutions to facilitate sustainable development.
 - c) Cooperate with relevant Working Groups to implement a mutual policy to share information, data, human resources, digital resources, and scientific infrastructure to promote research and development, and to avoid duplication of scientific efforts within the Belt and Road region.
 - d) Develop and promote global scientific networking and outreach by functioning as sub-centers to promote regional collaboration.
- 9.3 Each ICoE will develop a strategic plan that provides a detailed approach to how the ICoE will implement its enumerated tasks. Progress on the implementation of each strategic plan will be compiled on an annual basis and reviewed periodically by the Science Committee and DBAR Secretariat.

10 Formal Meetings

- 10.1 The Science Committee shall convene a high-level meeting, the “DBAR Science Committee Meeting”, at least once every year to review annual progress and to determine the general policy of DBAR. The agenda of the meeting shall be prepared by the Secretariat in consultation with the Science Committee.
- 10.2 Additional meetings of the Science Committee Members shall be convened on request of the Chair independently or in consultation with one or more Members.
- 10.3 The minimum quorum for Science Committee meetings is defined as half of the Science Committee Members. The resolution will be valid if the number of votes reaches half or more of the Science Committee membership.
- 10.4 The Secretariat shall organize the Science Team Meeting (STM), an annual congregation of all bodies of the DBAR Science Program, inviting the Co-Chairs of the Working Groups and Task Forces, Directors of ICoEs, and Science Committee Members to monitor progress, identify challenges, assess shortcomings, table motions, or request formal approval by the Science Committee.
- 10.5 The discussion and decisions during the formal meetings shall be recorded and documented as an official record of the Program by the Secretariat, with the responsibility to communicate the relevant information to all relevant bodies.
- 10.6 All formal meetings shall be organized onsite, online, or in hybrid format to ensure maximum participation of Members.
- 10.7 The Working Groups and ICoEs can organize additional meetings with the aim of improving and streamlining their efforts and ensuring best practices. The discussion and decisions during these meetings should be documented and submitted to the Secretariat for the record and for reporting purposes to the Science Committee.

11 The International Digital Belt and Road Conference

- 11.1 DBAR shall organize an International Digital Belt and Road Conference annually to gather scientists, engineers, managers, and experts from around the world for a multi-stakeholder engagement to improve scientific partnerships and networking towards collaborative and collective efforts for global and regional sustainable development.
- 11.2 A key objective of the annual international conference will be to understand and communicate the issues relating to baseline data collection for SDG indicators based on experiences from current or completed projects and the challenges and successes in adopting big Earth data for use as SDG indicators.

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- 11.3 The Co-Chairs of each Working Group shall be responsible for organizing a session during the international conference relevant to the scope of their Working Group.

12 Partnerships, collaboration, & cooperation with external organizations

- 12.1 All partnerships, collaborations, and cooperation in which DBAR will participate shall be done with approval of the DBAR Chair.
- 12.2 Any and all contributions by the DBAR Working Groups or ICoE in research, capacity development programs, workshops, conferences, and other activities shall be highlighted through the use of the official DBAR name and logo along with, if applicable, the name of the DBAR body leading or participating in the activity.

13 Data and information access and sharing

- 13.1 DBAR believes in data sharing and open data to facilitate scientific development in developing countries, especially those located in the Belt and Road region. DBAR will pursue co-design and co-production principles to improve capacity development with partner organizations.
- 13.2 Data sharing and open data access mechanisms will be set up with qualified and trusted parties and data resource partners only
- 13.3 DBAR and potential partners will exchange data and information following formal agreements in the form of a “Memorandum of Understanding” (MoU) or other partnership agreements with a clause on data sharing and data access.
- 13.4 All agreements on data and information sharing or access should identify and describe major governance goals, organizational structure, and the principles and guidelines for data access, use, and sharing. The agreements shall also cover ownership and copyright aspects of data and information sharing, made accessible or co-designed or co-produced with a signatory partner.
- 12.4 For raw or minimally processed EO data products, the GEO DSP principle shall be adopted.
- 12.5 DBAR will maintain the copyright on value-added information products, including those made freely available.

14 Amendments to the Terms of Reference

- 12.1 The Science Committee can review and make amendments to these Terms of Reference to accommodate new suggestions officially proposed by any formal body within DBAR.
- 12.2 The Terms of Reference may be used to modify the priorities or direction of DBAR stated in the DBAR Science Plan.

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- 12.3** Following approval by the Science Committee, the statements of this and any revisions of the Terms of Reference shall be considered amendments to the DBAR Science Plan and will supersede conflicts with the DBAR Science Plan, which will be amended accordingly.