INFORMATION NOTE

UN-SPIDER International Expert Meeting

"Towards Big (Space) Data in Support of Disaster Risk Reduction and Emergency Response in Africa"

Organized by the

United Nations Office for Outer Space Affairs / UN-SPIDER

through its

United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER)

and the

German Aerospace Center DLR

In cooperation with the

German Federal Ministry for Economic Affairs and Energy BMWi

With the support of the

Center for Remote Sensing of Land Surfaces (ZFL) of the University of Bonn

UN Campus

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A Pre-event of the

**United Nations / Germany High Level Forum:
The Way Forward after UNISPACE+50 and on Space2030**

1. Background

Natural and man-made disasters cause tremendous damage to societies around the world. They lead to loss of lives and property, displace people from their homes and destroy livelihoods, and disrupt sustainable development efforts worldwide. Developing countries are particularly susceptible to the impact of natural hazards as societies are more vulnerable and exposed, and less resilient to recover when disasters strike.

The 2030 Agenda for Sustainable Development and the Sendai Framework for Disaster Risk Reduction 2015-2030 highlight the interaction between sustainable development and disasters; and call on stakeholders to "build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters." This assessment is echoed by the 2004 Africa Regional Strategy for Disaster Risk Reduction, which guides efforts in this area on the continent and underlines that "disaster impacts have become an impediment to sustainable development in Africa".

Convinced that space technologies can play a vital role in supporting disaster management, the United Nations General Assembly (UNGA) established the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER) in 2006 as a programme to be implemented by the United Nations Office for Outer Space Affairs (UNOOSA). The General Assembly mandated UN-SPIDER to provide universal access to all countries and all relevant international and regional organizations to all types of space-based information and services relevant to disaster management to support the full disaster management cycle.

The ever-increasing availability and volume of data resulting from Earth observation satellites, "social" media, volunteered geographic information, virtual globes, or ubiquitous web repositories among other, may be analyzed and combined to generate insights into disaster risks and emergency situations and support evidence-based decision-making for emergencies and sustainable development.

The benefits of using big data approaches in synergy with space-based information for early warning, risk mapping and in disaster management have also been recognized in the Sendai Framework. The Sendai Framework calls for the use of satellite technologies, space-based information and big data applications at national and local levels; as well as for regional and international cooperation to facilitate the use of such technologies. Space and big data technologies are already, and will be even more so in the future, important elements in early warning systems (EWS), which are central to effective disaster preparedness and feature prominently in the Sendai Framework as well as in the Paris Agreement.

The space community has been conducting efforts in Africa to promote the use of satellite technologies and data-driven analysis work for several years. Examples of these include the Tiger programme of the European Space Agency (ESA); the Copernicus, GMES for Africa and Satellite Navigation Services for African Region (SAFIR) of the European Commission (EC); as well as SERVIR, which is driven by the National Air and Space Administration of the United States (NASA). While an increasing number of African countries are developing space and technology programs, many countries on the continent do not have easy access to space-based information and knowledge about how to benefit from big data sources in the context of disaster management and emergency response.

In its 2017 **African Space Policy**, the African Union outlines that space represents a unique opportunity for cooperation in using and sharing enabling infrastructure and data towards the proactive management of responses to natural hazards and disasters, amongst other fields. The African Union has set it as one goal to use space applications for improving weather forecasts to develop a range of early warning systems, as Africa is subject to various extreme weather, climate, ecosystem and geological events.

The African Union recognizes the significant role that space-based information systems play in risk and disaster management in Africa and has a high interest in improving and implementing space-related activities. In a similar fashion, the **Science, Technology and Innovation Strategy for Africa 2024** identifies "Protection of our Space" as one of its six priorities. This priority is based on the recognition of the benefits of the use of Earth observation combined with other mass data sources to monitor Africa's abundant natural resources; and on the view that space presents a unique opportunity for the continent to collectively address socio-economic development issues.

Strengthening international cooperation with Africa is one of the priorities of the German government and the European Union as highlighted by the **Marshall Plan with Africa** of the Federal Ministry for Economic Cooperation and Development (BMZ), the **Africa Strategy 2014-2018** of the Federal Ministry of Education and Research and the **G20 Compact with Africa**.

2. Objectives and expected outcomes of the expert meeting

The UN-SPIDER International Expert Meeting: "Towards Big (Space) Data in Support of Disaster Risk Reduction and Emergency Response in Africa" is conducted as a pre-event of the "United Nations / Germany High Level Forum: The Way Forward after UNISPACE+50 and on Space2030". The International Expert Meeting aims at contributing to an increased use of big data approaches and satellite technologies in African countries to respond to challenges posed by natural hazards. The International Expert Meeting will:

- Take stock of the recent developments in the implementation of the Sendai framework related to big data and space technology applications as well as in e.g. international networks such as the Global Partnership Using Space-based Technology Applications in Disaster Risk Reduction (GP-STAR), the data science and analytics networks available as well as the International Network on Multi-Hazard Early Warning Systems (IN-MHEWS).
- Engage experts and institutional partners in Germany and Europe which can accompany UN-SPIDER in strengthening the capacity of governments and stakeholders in Africa in making use of big data and satellite technologies in risk and disaster management.
- Identify relevant development and training needs of African partners to formulate strategies for technical advisory support to African countries upon demand and in line with the Africa Space Policy and UN-SPIDER's mandate.
- Raise awareness amongst participants of opportunities offered by the space community to use the latter's expertise and resources in risk and disaster management as a whole.

The outcomes, results and key recommendations of this International Expert Meeting will be published as a technical report and will be incorporated into the UN-SPIDER plan of work for the coming years.

3. Working modality for the International Expert Meeting

The Expert Meeting will include a keynote presentation to set the stage for panel sessions and discussions. The keynote presentation will address big (space) data technologies and their applications in disaster risk reduction, sustainable development and climate change.

One panel will address emerging requirements, experiences, wishes and opportunities by the disaster management and mitigation communities on the respective technologies. The second panel will gather the big data and space community to use present current trends and activities, limits and potential of the data and provider side. It will also address opportunities and challenges to use such technologies in Africa. A plenary discussion will be used to summarize and integrate comments and suggestions as well as to formulate needs and requirements for future R&D and training work.

4. Participants

The International Expert Meeting is expected to bring together around 50 participants from national, regional, and international organizations and institutions. Participants are also invited to take part in the "UN / Germany High Level Forum (HLF): The way forward after UNISPACE+50 and on Space2030" that will take place in Bonn, Germany, from 13 to 16 November 2018. Further information about the event is available at http://www.unoosa.org/oosa/en/ourwork/hlf/2018/hlf-bonn.html, Financial support to attend the HLF can be provided to selected participants.

5. Financial support to selected participants

Taking into consideration the limited financial resources available for this Expert Meeting, only a few qualified applicants from developing countries, who will have expressed the need for financial support, will be offered financial support to attend the event. This may include the provision of a round-trip air ticket between Bonn and the applicant's international airport of departure or daily subsistence allowances to cover board and lodging for the duration of the Expert Meeting. Any changes made to the travel itineraries proposed by the UN travel agency will be the responsibility of the participants.

Due to this limited availability of financial resources, applicants and their nominating organizations are strongly encouraged to find additional sources of sponsorship to attend the Expert Meeting.

6. Working language

The working language of the International Expert Meeting will be English. No simultaneous translation will be provided.

7. Dates and location of the International Expert Meeting

The International Expert Meeting will be held at the UN Campus in Bonn, Germany, on 12 November 2018. All selected participants will receive information with logistical details.

8. Life and health insurance

Life and major health insurance is the responsibility of each selected participant or his/her nominating institution or government. UNOOSA and the co-sponsors will not assume any responsibility for life and major health insurance nor for any other expenses related to medical treatment or accidental events.

9. Visas

Participants are responsible for making their own arrangements to secure the visas which may be required when making stop-overs in countries other than Germany due to flight connections and to enter Germany.

10. Point of contact

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