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| The International Teleocmmunication Union - Connecting the World. | **International telecommunication union****Telecommunication Standardization Bureau** |  |
|  | Geneva, 14 January 2021 |
| **Ref:** | **TSB Circular 291****FG-AI4NDM/MM** | **To:**- Administrations of Member States of the Union;- ITU-T Sector Members;- ITU-T Associates;- ITU Academia |
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| **Subject:** | **Creation of a new ITU-T Focus Group on AI for Natural Disaster Management (FG‑AI4NDM) and its first meeting: Virtual, 15-17 March 2021** |

Dear Sir/Madam,

1 Further to the agreement by ITU-T Study Group 2 at its e-plenary (18 December 2020), I am pleased to announce the establishment of a new [Focus Group on AI for Natural Disaster Management (FG-AI4NDM)](http://www.itu.int/go/fgai4ndm). The Focus Group will hold its first workshop and meeting on 15-17 March 2021.

2 Under the chairmanship of Dr Monique Kuglitsch (Fraunhofer HHI), the group will produce a roadmap for AI activities for Natural Disaster Management, establish a roster of stakeholders and experts, host workshops and meetings, and prepare technical reports and educational material that highlight best practices and set out possible future directions for this emerging area of study. The activities of this focus group are expected to be carried out in close collaboration with the World Meteorological Organization (WMO), the United Nations Environment Programme (UNEP), and other relevant stakeholders.

3 Participation in FG-AI4NDM is free of charge and open to individual experts and organizations from all sectors and relevant disciplines, including geosciences, artificial intelligence/machine learning (AI/ML), and other areas of information and communication technologies. Experts from all regions, particularly developing countries, including least developed countries (LDCs) and small island developing states (SIDS), are encouraged to contribute to this work. Member States strongly encourage this diversity to be reflected among the leadership team. Anyone interested in following or participating in this work is invited to subscribe to a dedicated mailing-list; details on how to subscribe can be found at: <http://itu.int/go/fgai4ndm-quicksteps>.

4 The group will operate under the procedures set out in [Recommendation ITU-T A.7](http://www.itu.int/rec/T-REC-A.7) and within the agreed terms of reference reproduced in **Annex 1**. The focus group’s lifetime is set for one year from the first meeting, with the possibility for a further year subject to the agreement of its parent study group, ITU-T Study Group 2.

5 The first meeting of FG-AI4NDM will be held virtually from 15 to 17 March 2021 (1000-1400 hours Geneva time). The objectives of the first meeting include:

– discussion on priority action areas and the expected impact of the work;

– appointment of FG-AI4NDM management, including vice-chairs;

– agreement on an FG-AI4NDM roadmap of expected deliverables, timelines, scopes, and editors and assignment of responsibilities to the various subgroups;

– agreement on FG-AI4NDM working methods, using ITU-T A.7 as a base;

– agreement on FG-AI4NDM future meeting plans, including frequency of meetings;

– review of written contributions and initial development of the scope of deliverables.

6 Written contributions are essential to the eventual success of the focus groups, and are strongly encouraged in line with the terms of reference set out in **Annex 1,** and to address the objectives highlighted above to foster an initial development plan of deliverables. Written contributions should be submitted to the TSB Secretariat (tsbfgai4ndm@itu.int) in electronic format using the templates available from the [FG-AI4NDM homepage](http://www.itu.int/go/fgai4ndm). **The contribution deadline for the first meeting is 2 March 2021.**

7 The meeting agenda, documents and other practical information will be available via the [FG-AI4NDM homepage](http://www.itu.int/go/fgai4ndm) in advance of the meeting. The discussions will be held in English only via the [MyMeetings platform](https://www.itu.int/myworkspace/#/MyMeetings).

9 To enable ITU to make the necessary arrangements, participants are invited to register online via the [FG-AI4NDM homepage](http://www.itu.int/go/fgai4ndm) as soon as possible. Note that registration is mandatory.

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| 2 March 2021 | Submit written contributions (by e-mail to tsbfgai4ndm@itu.int) |
| 5 March 2021 | Pre-registration online at<https://www.itu.int/net4/CRM/xreg/web/Login.aspx?src=Registration&Event=C-00009268>  |

I wish you a productive and enjoyable meeting.

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| Yours faithfully,Chaesub LeeDirector of the TelecommunicationStandardization Bureau | Latest meeting information |

**Annexes:** 1

**ANNEX 1**

Terms of Reference for the ITU-T Focus Group on
“Artificial Intelligence for Natural Disaster Management” (FG-AI4NDM)

# 1. Context and scope

Natural disasters are generally defined as a “potentially damaging physical event”[[1]](#footnote-1) of a predominantly natural origin (e.g., atmospheric, hydrologic, geophysical, oceanographic, or biologic).[[2]](#footnote-2) Adverse effects of these events include injury, mortality, displacements, damage to property (including cultural heritage) and infrastructure, and disturbance to nature and natural resources.

Between 2005 and 2015, natural disasters impacted 1.5 billion people in various ways (700,000 lives were lost, 1.4 million injuries were suffered, and 23 million were left homeless),[[3]](#footnote-3) and it has been shown that these natural disasters were predominantly hydrometeorological in origin. The situation is particularly acute in small island developing states (SIDS) and least developed countries (LDC).[[4]](#footnote-4) Furthermore, women, children, and individuals in vulnerable situations, in particular, are disproportionately affected.[[5]](#footnote-5)

Unfortunately, the effects of natural disasters are anticipated to grow through the combination of population growth, rapid urban development (often in otherwise vulnerable regions), and the growing frequency and intensity of certain types of natural disasters, in particular, those related to atmospheric, hydrologic, and oceanographic processes.[[6]](#footnote-6)

As a result of these widespread and diverse impacts, natural disasters are targeted in the activities of multiple United Nations offices (e.g., United Nations Office for Disaster Risk Reduction), programs (e.g., United Nations Environment Programme), and organizations (e.g., World Meteorological Organization; United Nations Educational, Scientific, and Cultural Organization). Furthermore, natural disasters feature prominently in reports including the Hyogo Framework for Action 2005[[7]](#footnote-7) and Sendai Framework for Disaster Risk Reduction 2015-2030,[[8]](#footnote-8) are the subject of a previous Study Group 2 focus group,[[9]](#footnote-9) and are explored in a 2019 ITU-D report.[[10]](#footnote-10)

To minimize the costs (including the adverse effects listed above) and enhance the preparedness for (and response to) natural disasters,[[11]](#footnote-11) FG-AI4NDM explores the potential of AI to support data collection and handling, improve modelling across spatiotemporal scales through extracting complex patterns (and gaining insights) from a growing volume of geospatial data, and provide effective communication. To achieve these ambitious objectives, FG-AI4NDM will converge multiple stakeholders and experts from across the globe. Special effort will be made to support participation from low- and mid-income countries and those countries shown to be particularly impacted by these types of events (e.g., SIDS and LDC). Finally, FG-AI4NDM will advance the efforts of parent group Study Group 2 to provide disaster relief/early warning and recovery through telecommunications technologies, and build on the work of the previous ITU-T Study Group 2 Focus Group on Disaster Relief Systems, Network Resilience and Recovery (FG-DR&NRR).

# 2. Goals and objectives of FG-AI4NDM

FG-AI4NDM will pursue the following broad set of goals:

1. To build a community of stakeholders and experts[[12]](#footnote-12) from around the globe to explore the use of AI (in the context of data, modelling, and communication technologies) for natural disaster management.[[13]](#footnote-13)
2. To maximize synergies within this community to support the interlinked goals of the UN for a better and more sustainable future.[[14]](#footnote-14)
3. To identify projects in the area of AI (in the context of data, modelling, and communication technologies) for natural disaster management and to find ways to optimally incorporate their outputs into the focus group activities. To identify areas where AI (in the context of data, modelling, and communication technologies) can (but does not yet) support natural disaster management with a particular focus on vulnerable and resource-constrained regions.
4. To identify any activities related to the use of AI for data, modelling (reconstructing, forecasting, and projecting), and communication in natural disaster management.
5. To identify current best practices on the use of AI to support data, modelling (reconstructing, forecasting, and projecting), and effective communication[[15]](#footnote-15) in natural disaster management.
6. To support efforts being made to develop global data repositories (including cloud solutions) on relevant natural disaster data for use cases (i.e., specific natural disaster types).
7. To support the implementation of the Sendai Framework for Disaster Risk Reduction (2015-2030).[[16]](#footnote-16)
8. To liaise and collaborate with other ITU-T study groups to ensure a harmony of complementary activities.

# 3. Structure

FG-AI4NDM can create subgroups as needed. To coordinate operations and provide guidance to subgroups, there will be a chair and vice-chairs.

# 4. Specific tasks and deliverables

Tasks and deliverables developed by FG-AI4NDM may include the following:

1. Constructing a roadmap for AI activities (in the context of data, modelling, and communication technologies) in natural disaster management.
2. Establishing a roster of stakeholders and experts and making a concerted effort to engage them in focus group activities.
3. Holding workshops that bring together stakeholders and experts, highlight ground-breaking activities in the area of AI (in the context of data, modelling, and communication technologies) for natural disaster management, and facilitate recruitment of new focus group members. In addition, evaluating proposals of new use cases.
4. Working towards drafting non-normative deliverables (e.g., technical reports) on the use of AI to support data, modelling (reconstructing, forecasting, and projecting), and effective communication[[17]](#footnote-17) of natural disasters, based on input from the use cases.
5. Working towards development of educational materials (e.g., online courses and pamphlets) in conjunction with WMO (and other partners), which make the content of (4) accessible to all stakeholders and experts, in particular, those in SIDS and LDC.
6. Creating a comprehensive report, once FG-AI4NDM has achieved the aforementioned tasks, which summarizes these accomplishments and provides suggestions for future directions.

# 5. Relationships

FG-AI4NDM will work closely with relevant study groups in ITU (-R, -T and -D) including co-located meetings when possible. It will also establish and maintain task-appropriated collaboration arrangements with other groups in ITU and with WMO as well as other UN bodies (e.g., UNEP, UNESCO).

Furthermore, FG-AI4NDM will collaborate (as required) with other relevant groups and entities, in accordance with the Recommendation ITU-T A.7. These include governments (i.e., ITU member states), non-governmental organizations (NGOs), policy-makers, standard developing organizations, industry forums and consortia, companies, academic institutions, research institutions, and other relevant organizations.

# 6. Parent group

The parent group of the FG-AI4NDM is ITU-T Study Group 2 “Operational Aspects.”

Study Group 2 leads ITU’s work on telecommunications for disaster relief/early warning, network resilience and recovery, including the coordination of related studies across the various ITU-T study groups. Accordingly, it would be appropriate to have Study Group 2 as the parent for FG-AI4NDM.

# 7. Leadership

The stipulations in clause 2.3 of Recommendation ITU-T A.7 apply.

# 8. Participation

See clause 3.1 of Recommendation ITU-T A.7.

Any individual from a country that is a member of ITU and who is willing to contribute actively to the work may participate in the focus group. This includes individuals who are also members of international, regional, and national organizations.

In addition, a list of participants will be maintained for reference purposes and reported to the parent group.

# 9. Administrative support

The stipulations in clause 5 of Recommendation ITU-T A.7 apply.

# 10. General financing

FG-AI4NDM will follow the guidance in clause 4 of Recommendation ITU-T A.7 with regard to financing of focus groups and their meetings and clause 10.2 of Recommendation ITU-T A.7 with regard to printing and distribution of deliverables.

# 11. Meetings

FG-AI4NDM will conduct regular meetings. The frequency and locations of meetings will be determined by the focus group management. The overall meetings plan will be announced after the approval of the terms of reference.

The focus group will use remote collaboration tools to the maximum extent, and collocation with existing ITU study group(s) meetings is encouraged.

The meeting dates will be announced by electronic means (e.g., e-mail and website, etc.) at least four weeks in advance.

# 12. Technical contributions

See clause 8 of Recommendation ITU-T A.7.

Any participant may submit a technical contribution directly to FG-AI4NDM, in accordance with the time schedule adopted. A template for contributions can be found on the ITU-T website. Electronic document transfer methods should be used whenever possible.

# 13. Working language

The working language is English.

# 14. Approval of deliverables

Approval of deliverables shall be taken by consensus.

# 15. Working guidelines

Working procedures shall follow the procedures of Rapporteur group meetings.

FG-AI4NDM will exchange draft deliverables and other outcomes on a regular basis with its parent group, to ensure efficient transfer of deliverables to streamline future activities (see ITU-T A.7 Appendix I).

No additional working guidelines are defined.

# 16. Progress reports

Regular progress reports will be provided at each meeting of the parent group, as per the guidance in clause 11 of Recommendation ITU-T A.7.

# 17. Announcement of focus group formation

The creation of FG-AI4NDM will be announced through a TSB Circular to all ITU membership. ITU-T Newslog post, press releases, and other means could be utilized.

# 18. Milestones and duration of the focus group

The Focus Group lifetime is set for one year from the first meeting, with the possibility for a further year subject to the agreement of the study group (see ITU-T A7, clause 2.2).

# 19. Patent policy

See clause 9 of Recommendation ITU-T A.7.

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1. <https://www.unisdr.org/files/1037_hyogoframeworkforactionenglish.pdf> [↑](#footnote-ref-1)
2. We acknowledge that there is some controversy surrounding the use of the expression “natural disasters” to describe such events (<https://link.springer.com/article/10.1007/s11069-016-2726-x> and <https://www.preventionweb.net/experts/oped/view/72768>). However, many natural scientists (and other stakeholders) still recognize and utilize the term. [↑](#footnote-ref-2)
3. <https://www.undrr.org/publication/sendai-framework-disaster-risk-reduction-2015-2030> [↑](#footnote-ref-3)
4. <https://library.wmo.int/doc_num.php?explnum_id=10385> [↑](#footnote-ref-4)
5. <https://www.undrr.org/publication/sendai-framework-disaster-risk-reduction-2015-2030> [↑](#footnote-ref-5)
6. <https://www.ipcc.ch/site/assets/uploads/2018/03/SREX_Full_Report-1.pdf> [↑](#footnote-ref-6)
7. <https://www.unisdr.org/files/1037_hyogoframeworkforactionenglish.pdf> [↑](#footnote-ref-7)
8. <https://www.undrr.org/publication/sendai-framework-disaster-risk-reduction-2015-2030> [↑](#footnote-ref-8)
9. <https://www.itu.int/en/ITU-T/focusgroups/drnrr/Pages/default.aspx> [↑](#footnote-ref-9)
10. <https://www.itu.int/en/ITU-D/Emergency-Telecommunications/Documents/2019/GET_2019/Disruptive-Technologies.pdf> [↑](#footnote-ref-10)
11. FG-AI4NDM will also consider inclusion of events of non-natural origins, provided that they are deemed to be clearly influenced by (or of influence to) atmospheric, hydrologic, geophysical, oceanographic, or biologic processes. [↑](#footnote-ref-11)
12. This includes representatives of the UN, government agencies and policy-makers, standard developing organizations (SDO), scientific unions and professional societies, academies, researchers in multiple disciplines including geosciences and AI/machine learning [and other areas of information and communication technology (ICT)], and industry members (including areas of ICT). [↑](#footnote-ref-12)
13. In particular, to encourage SDO to participate in the activities of the focus group, to facilitate the exchange of perspectives of ICT users (in the context of AI), and to explore relevant socio-economic and policy implications. Special effort will be made to support participation (e.g., through identifying potential sources of financial support) from low- and mid-income countries and those countries shown to be particularly impacted by these types of events (e.g., SIDS and LDC). [↑](#footnote-ref-13)
14. <https://sdgs.un.org/goals> [↑](#footnote-ref-14)
15. This includes technical aspects (e.g., how AI and other digital technologies can be used to transmit communication; what opportunities exist for communication infrastructure) and sociological/demographical aspects (e.g., how individuals of different backgrounds and abilities respond to different forms of communication; and inclusiveness, for instance, the needs of vulnerable populations). [↑](#footnote-ref-15)
16. <https://www.undrr.org/publication/sendai-framework-disaster-risk-reduction-2015-2030> [↑](#footnote-ref-16)
17. This includes technical aspects (e.g., how AI and other digital technologies can be used to transmit communication; what opportunities exist for communication infrastructure) and sociological/demographical aspects (e.g., how individuals of different backgrounds and abilities respond to different forms of communication; and inclusiveness, for instance, the needs of vulnerable populations). [↑](#footnote-ref-17)