

Terms of Reference: **ITU-T Focus Group on “Artificial Intelligence for Health” (FG-AI4H)**

(Approved by ITU-T SG16 on 2018-07-20)

1. Rationale and scope

Artificial intelligence (AI) has the potential to improve digital health significantly by improving medical diagnostics and treatment decision processes based on digital data. For example, in medical image processing research, machine learning systems increasingly attain, or at times even surpass, human accuracy for some classification or detection tasks (for example in the areas of skin diseases, retinoblastoma, and dysgraphia), and can thus in principle serve as pre-screening tools.

AI-based health services and applications could also be used by patients to help assess symptoms, or to help decide whether to contact a medical professional. In an emergency, user-collected data and an AI-generated medical diagnosis can be sent together in advance to a hospital. In regions with limited access to quality healthcare, these tools could greatly aid medical practitioners, allowing them to focus on critical cases. However, due to business, legal, technical, or other constraints, such solutions are rarely deployed in practice at a global scale.

The ITU-T Focus Group on “Artificial intelligence for health” (FG-AI4H) engages researchers, engineers, practitioners, entrepreneurs and policy makers, to enable leveraging such solutions in practice.

Many of the proposals in the AI + Health Session of the AI for Good Global Summit (2018) have identified common issues that benefit from a structure to share information, collaborate and deliver on their goals.

2. Goals and objectives of the FG-AI4H

The FG-AI4H will pursue the following broad sets of goals:

1. To be a platform to facilitate a global dialogue for AI for health.
2. To collaborate with WHO in developing appropriate national guidance documents for establishing policy-enabled environment to ensure the safe and appropriate use of AI in health.
3. To identify standardization opportunities for a benchmarking framework that will enable broad use of AI for health.
4. To create a technical framework and standardization approach of AI for health algorithm assessment and validation.
5. To develop open benchmarks, targeted to become international standards, and serve as guidance for the assessment of new AI for health algorithms.
6. To develop, together with WHO, an assessment framework for an evaluation and validation process of AI for health.
7. To collaborate with stakeholders to monitor and collect feedback from the use of AI algorithms in healthcare delivery environment, and to provide feedback to development of improved international standards.
8. To generate a transparent documentation by creating reports and specifications towards enabling external assessment of the benchmarking framework and the benchmarked AI for health methods.

3. Structure

The FG-AI4H may establish sub-groups if needed.

4. Specific tasks and deliverables

Tasks and deliverables developed by the FG-AI4H may include the following:

- To develop a list of standards bodies, forums, consortia, regulators, core research organizations, engineering teams, health professionals, entrepreneurs, digital health policy makers and other entities dealing with aspects of AI and to establish liaisons and relationships with some of the listed organizations.
- To organise thematic workshops and forums on AI for health, which will bring together all stakeholders, and promote the FG activities and encourage both ITU members and non-ITU members to join its work.
- To gather information on initiatives pertaining to AI for health and to identify existing standards, AI methods, best practises and challenges for the adoption. To review existing technologies, platforms, guidelines, standards and applications in AI for health.
- To identify various use case descriptions of AI for health-based methods including the problem description. To identify potential health problems to which AI-relevant interventions and machine learning can be applied and assessed that are scalable.
- To identify structured and normalized medical data required for testing AI algorithms that are part of emerging medical devices and diagnostics and to collect health data for the identified use cases.
- To identify interfaces, criteria and to specify the framework for assessment and validation of AI-based solutions for the identified use cases.
- To provide use case-specific benchmarking (results) of AI candidate algorithms and to generate reports.
- To draft technical reports and specifications for assessment frameworks for AI for health, including for example data formats, interfaces, architecture, and protocols. Note, it is not intended to specify the AI for health algorithms themselves as an ITU Recommendation.
- To write a report(s) of the FG activities including a recommendation how to proceed with AI for health standardization after the FG finished its work.

5. Relationships

This Focus Group 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 WHO.

Furthermore, the FG-AI4H will collaborate (as required) with other relevant groups and entities, in accordance with Recommendation ITU-T A.7. These include governments, non-governmental organizations (NGOs), policy makers, SDOs, industry forums and consortia, companies, academic institutions, research institutions and other relevant organizations.

6. Parent group

The parent group of the FG-AI4H is **ITU-T Study Group 16** “Multimedia coding, systems and applications”.

Study Group 16 leads ITU’s standardization work on multimedia coding, systems and applications, including the coordination of related studies across the various ITU-T SGs.

It is also the lead study group on ubiquitous multimedia applications; telecommunication/ICT accessibility for persons with disabilities; human factors; multimedia aspects of intelligent transport system (ITS) communications; Internet Protocol television (IPTV) and digital signage; and multimedia aspects of e-services (there included e-health).

FG-AI4H has several aspects of imaging and e-health and the need for collaboration between WHO and ITU. SG16 is the logical Study Group to be the parent for this FG.

7. Leadership

See clause 2.3 of Recommendation ITU-T A.7.

8. Participation

See clause 3 of Recommendation ITU-T A.7. A list of participants will be maintained for reference purposes and reported to the parent group.

It is important to mention that the participation in this Focus Group has to be based on contributions and active participations.

9. Administrative support

See clause 5 of Recommendation ITU-T A.7.

10. General financing

See clauses 4 and 10.2 of Recommendation ITU-T A.7.

11. Meetings

The Focus Group 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.

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.

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

No additional working guidelines are defined.

16. Progress reports

See clause 11 of Recommendation ITU-T A.7.

17. Announcement of Focus Group formation

The formation of the Focus Group will be announced via TSB Circular to all ITU membership, via the ITU-T Newslog, press releases and other means, including communication with the other involved organizations.

18. Milestones and duration of the Focus Group

The Focus Group lifetime is set for two years from the first meeting but extensible if necessary by decision of the parent group (see ITU-T A7, clause 2.2).

19. Patent policy

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