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WG(s): Plenary Geneva, 30 May – 1 June 2019

**DOCUMENT**

Source: FG-AI4H

Title: Updated Call for Proposals: Use Cases, Benchmarking, and Data

Purpose: Admin

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**Abstract:** The ITU/WHO Focus Group on "Artificial Intelligence for Health" invites proposals for representative use cases and associated data sets. These data sets will be used to test AI technology for health within a standardized benchmarking framework. If you are interested in getting involved, please prepare a proposal according to the instructions in this document, e-mail it to [tsbfgai4h@itu.int](mailto:tsbfgai4h@itu.int) by 26 August 2019, and present it at meeting F in Zanzibar, 3-5 September 2019.

[This document contains the latest update of the FG-AI4H Call for Proposals: use cases, benchmarking, and data document, based on the experience gathered from the previous meetings.]

**Motivation**

Over the last decade, considerable resources have been allocated to exploring the use of AI for health. This has revealed an immense potential but also exposed a weakness. AI models are highly complex and depend on the underlying training data. If the AI technology is poorly designed and/or the training data are biased or incomplete, errors or problematic results can occur.

An AI-based solution can only be used with complete confidence if it has been quality controlled through a rigorous evaluation against a system of standards. Towards developing such standards, the International Telecommunication Union (ITU) has established the Focus Group on "Artificial Intelligence for Health" (FG-AI4H) in partnership with the World Health Organization (WHO). ITU and WHO have considerable experience in the standardization of information/communication technologies and the health domain, respectively, making FG-AI4H ideally suited for establishing a standard assessment framework of AI for health (cf. our [comment](#) in *The Lancet* and our [Whitepaper](#)).

The discussions within FG-AI4H have led to a two-step process. First, a *Call for proposals: use cases, benchmarking and data* (i.e. this call) is issued to generate the necessary framework to issue the secondary *Call for AI technology for health*, which is targeted towards evaluating AI applications for the use cases and data that were selected and evaluated as a result of this initial call. This approach provides an open and transparent process that allows participants to become involved with suggesting and selecting use cases and the associated data, and to participate in the testing of AI models at an international/world-wide level.

Hence, with this initial call, FG-AI4H will explore the feasibility of use cases for evaluating AI applications. One necessary condition for the feasibility of a use case is that data need to be identified because AI models can only be benchmarked against actual test data. For a valid evaluation, these test data must remain undisclosed before the test. Furthermore, these data must be

of high quality, of ethical source, and accompanied by information about their format and properties. Finally, these data should originate from a variety of sources, so that we can ascertain whether an AI model can generalize across different conditions, locations, and/or settings (e.g. across different people, hospitals, and/or measurement devices). Additional information can be found in the documents [D-103](#) ("data acceptance and handling policy") and [C-104](#) ("thematic classification scheme") on our [website](#).

Another important condition for a use case to be considered feasible is that the exact health problem(s) that an AI algorithm should solve needs to be specified. The health problem should be relevant (e.g. it impacts a large and diverse part of the global population and/or it solves a problem that is difficult/problematic/expensive for humans) and the AI-based solution should promise tangible improvements relative to the current practices either in terms of quality, efficiency, or both (leading to better care, results, and/or cost effectiveness).

Finally, the benchmarking process needs to be defined and a statistical metric (or metrics) should be selected to evaluate the performance of the AI model.

FG-AI4H has decided to first issue this call for proposals of representative use cases and of associated data sets. By responding to this call, the initial steps are made toward creating the framework that is needed to enable the FG-AI4H to arrive at the call for AI solutions. Hence, responding to this call by providing the information requested below marks the start of the described process.

### **Logistics**

To prepare your proposal, please download the document template from <https://itu.int/en/ITU-T/focusgroups/ai4h/Documents/FGAI4H-Doc-template.docx>.

Update the document header as follows. WG(s): *Plenary – Zanzibar, 3-5 September 2019*. Source: *Your name or organization*. Title: *Title of your use case and data*. Purpose: *Discussion*. Contact: *Insert contact name, contact organization, country, telephone, e-mail*. Abstract: *Summarize your proposal*.

Enter all information requested in sections 1-11 below (using the same outline and section titles), and e-mail your proposal as Word file to [tsbfgai4h@itu.int](mailto:tsbfgai4h@itu.int) by 26 August 2019 @ 23:59 (CEST) at the latest.

You are required to present this proposal at the next FG-AI4H meeting, which will take place in Zanzibar, 3-5 September 2019, answer questions, and provide updates if necessary. PowerPoint slides can complement your presentation at that meeting. All proposals will be published on our collaboration site. For meeting attendance, it is necessary to register on the website, where you will also find information about our workshop just prior to the meeting.

### **Important dates / actions for Meeting F**

**Venue:** Zanzibar

<b>Date</b>	<b>Action</b>	<b>Reference</b>
26 August 2019 @ 23:59 (CEST)	Deadline for submitting proposals	By e-mail to <a href="mailto:tsbfgai4h@itu.int">tsbfgai4h@itu.int</a> Submit using the <a href="#">template</a> in WinWord format. Slides can be used, but as supplementary material
26 August 2019	Register to attend the workshop and FG meeting.	<a href="https://itu.int/go/fgai4h/reg">https://itu.int/go/fgai4h/reg</a> Instructions: <a href="https://www.itu.int/en/ITU-T/focusgroups/ai4h/Documents/registrationsteps.pdf">https://www.itu.int/en/ITU-T/focusgroups/ai4h/Documents/registrationsteps.pdf</a>
2 September 2019	ITU/WHO AI4H Workshop	<a href="https://itu.int/go/fgai4h">https://itu.int/go/fgai4h</a>
3-5 September 2019	FG-AI4H meeting	<a href="https://itu.int/go/fgai4h/collab">https://itu.int/go/fgai4h/collab</a>

## **1 Overview**

Please give a general overview of the use case and of the health problem that is being addressed.

## **2 Relevance**

Please explain the relevance of the health problem.

## **3 Impact**

How could an AI solution provide an improvement relative to the current practice (e.g. will it lead to better care, lower cost, or higher efficiency)?

Furthermore, describe the potential impact of benchmarking AI-based solutions for the use case.

## **4 Existing work**

Does the project start from scratch?

If not, please provide a brief overview of existing work in the area of the project.

Specifically, please explain the current state of the art and how the problem is currently addressed.

## **5 Feasibility**

Is the project feasible, based on the current state of the art?

Please explain in a few sentences how you see the project progressing from start to finish.

## **6 Data availability**

Please describe the data sets that are available for the project.

In particular, can you provide data that have not been (and will not be) disclosed?

These test data will only be used to evaluate the AI solutions.

Can an example subset of the data be made available to AI developers?

Please briefly describe the data format and how (if relevant) the data have been labelled/annotated.

Do you see legal obstacles to sharing the data with FG-AI4H (data protection and privacy laws, copyright)?

Furthermore, are there open data sets available for training purposes?

Would you be able to contribute to an open data set for training purposes?

## **7 Data quality**

Please demonstrate that the available data are of high quality.

## **8 Annotation/label quality**

Please demonstrate that the annotations/labels of the data are of high quality.

## **9 Data provenance**

Please demonstrate that the data have been obtained in a professional and ethical way.

Do the data come from a variety of sources (e.g. clinical environments)?

## **10 Benchmarking**

Please describe what type of AI model/algorithm you expect to be benchmarked by your test data.

How should the AI model/algorithm be evaluated (including statistics/metrics)?

## **11 Organizer**

Please describe why your organization is interested in this project, and if you have run similar projects/benchmarks/challenges before.

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