FGAI4H-P-002

Helsinki, 20-22 September 2022

Source:	Chairman FG-AI4H
Title:	Introduction to ITU/WHO Focus Group on AI for Health
Purpose:	Information

Contact:	Thomas Wiegand Chair, FG-AI4H Fraunhofer HHI Germany	E-mail: thomas.wiegand@hhi.fraunhofer.de

Abstract: This PPT contains an introduction to the ITU/WHO Focus Group on Artificial Intelligence for Health (FG-AI4H).

Introduction to the ITU/WHO Focus Group on Artificial Intelligence for Health

Helsinki, 19 – 22 September 2022

Thomas Wiegand
Fraunhofer HHI & TU Berlin, Germany

AI for Health
ITU-WHO Focus Group

World Health Organization

Funding support by:
fondation BOTNAR

AI offers large potential for health care

AI for Health
ITU-WHO Focus Group
World Health Organization

- **Standardization of health AI** needed to **facilitate safe use** on a local and **global scale**
- **Healthcare** is **much more complex** and **critical** than other areas where AI has been successfully implemented (e.g., advertisement-, entertainment)
- **Focus Group on AI for Health** est'd in 2018 as **ITU/WHO collaboration** to address challenges related to AI and health

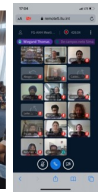
Starting a global dialogue on AI & health: Meetings & Workshops

AI for Health
ITU-WHO Focus Group



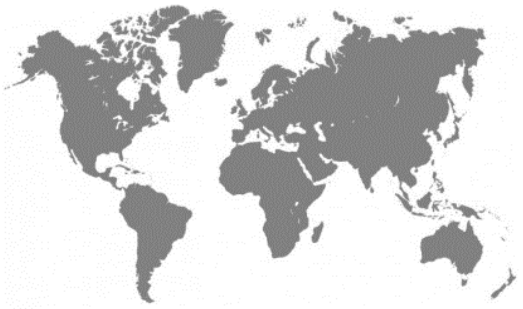




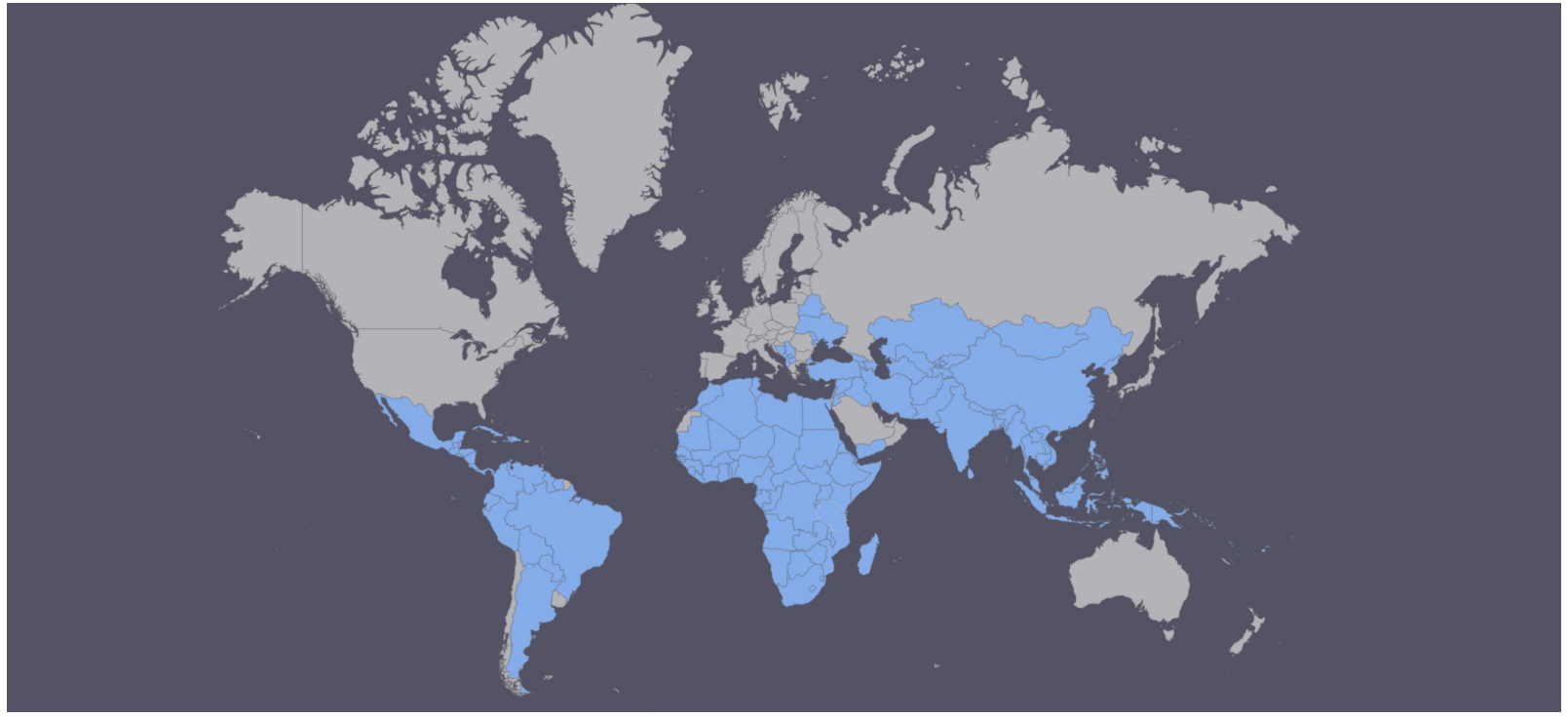



5/2018 AI for Good Geneva
11/2018 Columbia University NYC
4/2019 World Expo Shanghai
9/2019 UCSAF Zanzibar
1/2020 PAHO/WHO Brasilia
5/2020 Online
1/2021 Online
9/2021 Online
05/2022 Berlin

10/2018 WHO HQ Geneva
1/2019 EPFL Lausanne
5/2019 AI for Good Geneva
11/2019 ICMR & NICF New Delhi
~~3/2020 AI in Singapore~~
9/2020 Online
5/2021 Online
2/2022 Online
09/2022 Helsinki



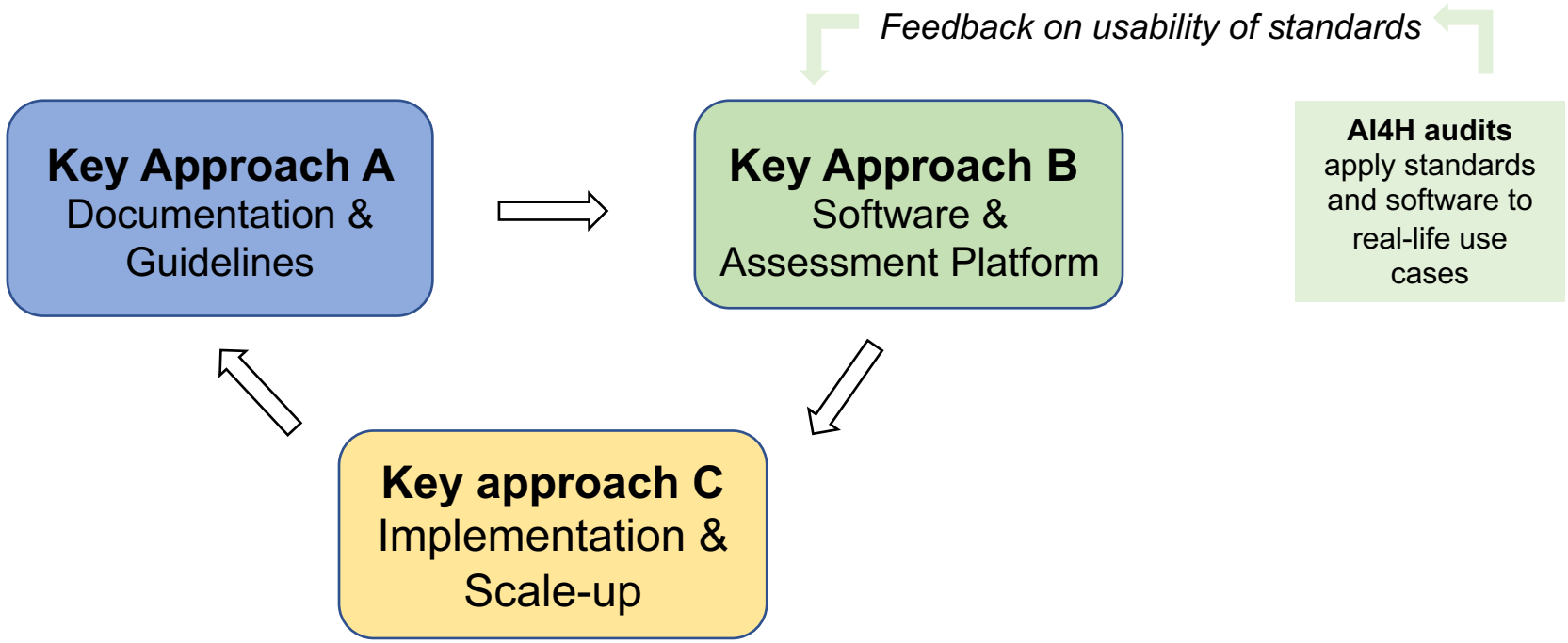
Include the global north and south



fondation BOTNAR

- Travel funds to workshops & meetings for experts from LMICs

ITU/WHO Focus Group Ecosystem

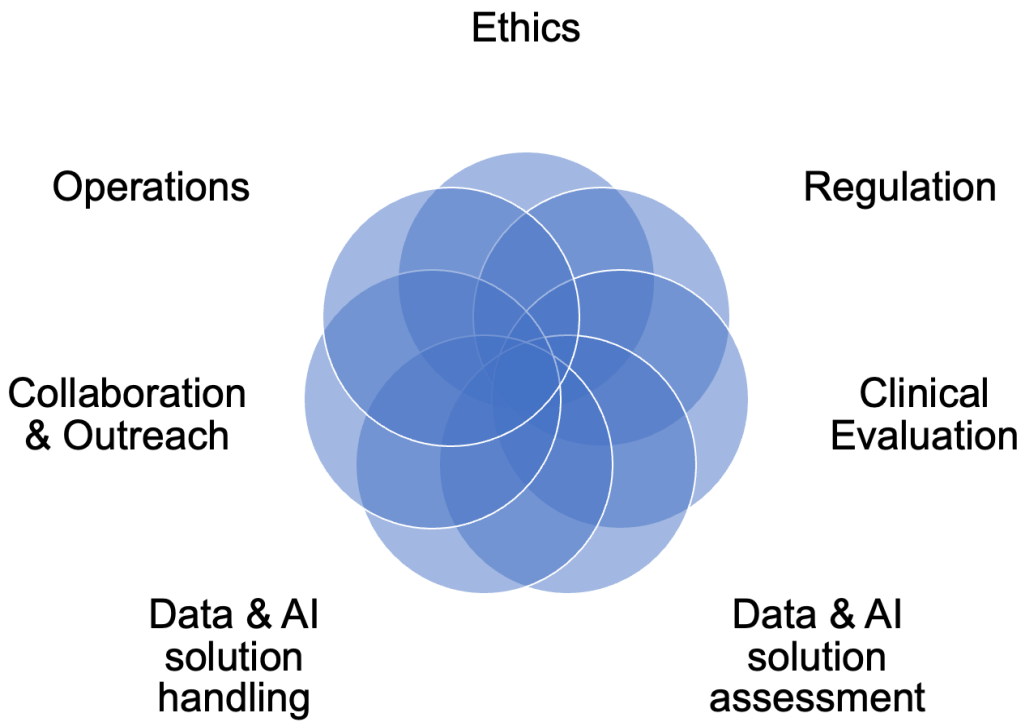


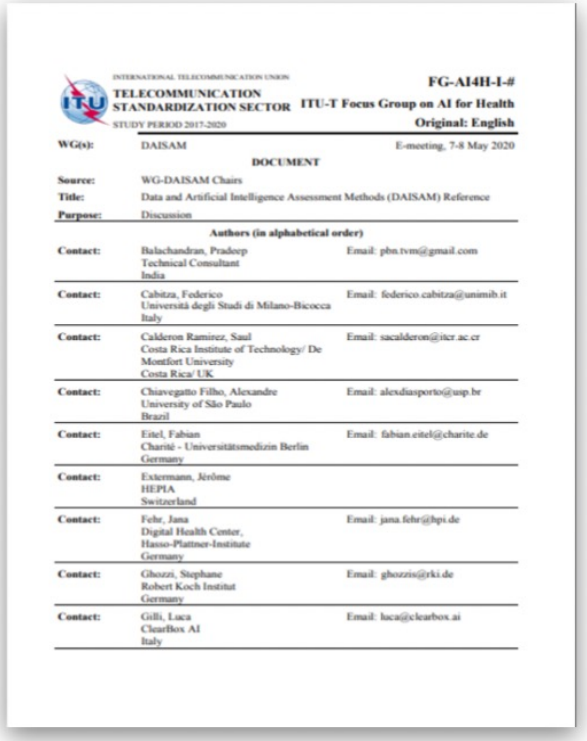
A) Creation of guidance documents & standards for AI4 health

B) Open-source software for AI auditing, benchmarking, data annotation, sourcing

C) Global applicability and implementation of these standards (by FG-AI4H's WG-CO)

Key approach A – Documentation & Guidelines
Creating guidance documents and standards for AI-for-health





INTERNATIONAL TELECOMMUNICATION UNION
TELECOMMUNICATION STANDARDIZATION SECTOR
STUDY PERIOD 2017-2020

FG-AI4H-I-#
ITU-T Focus Group on AI for Health
Original: English

WG(s): DAISAM — E-meeting, 7-8 May 2020

DOCUMENT

Source: WG-DAISAM Chairs
Title: Data and Artificial Intelligence Assessment Methods (DAISAM) Reference
Purpose: Discussion

Authors (in alphabetical order)

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Working Groups are dedicated to **horizontal,** overarching matters

- Create **best practices & reference documents**
- Establish **processes** and related policies

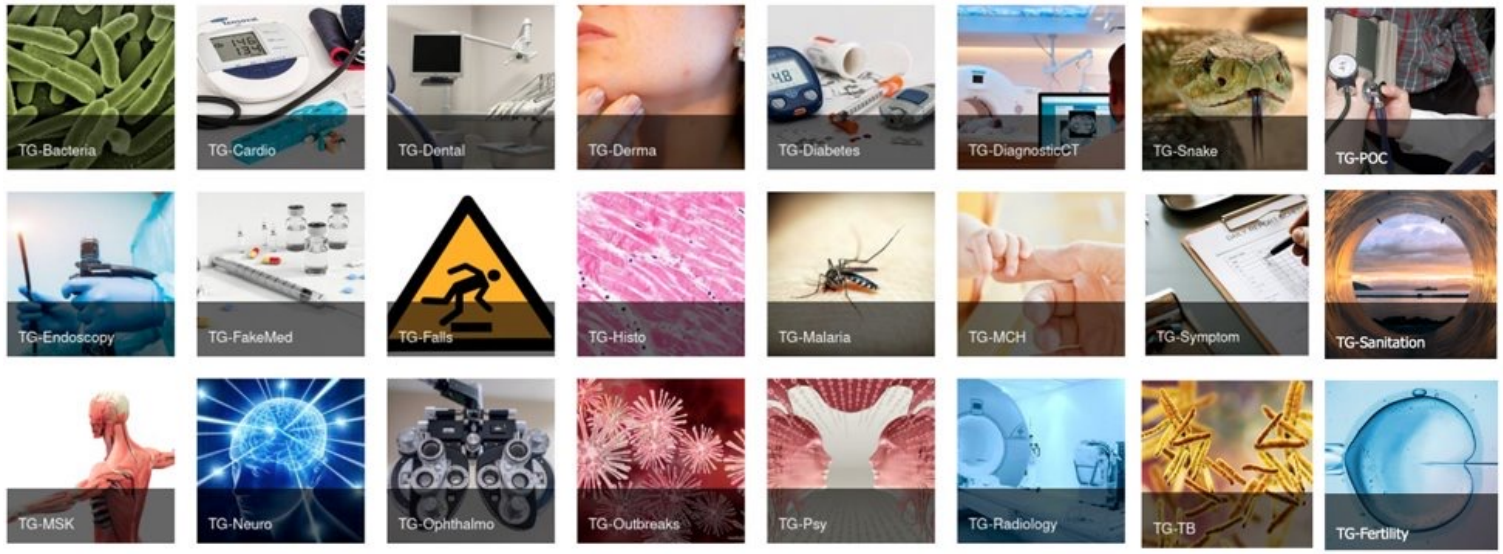
A – Documentation & Guidelines

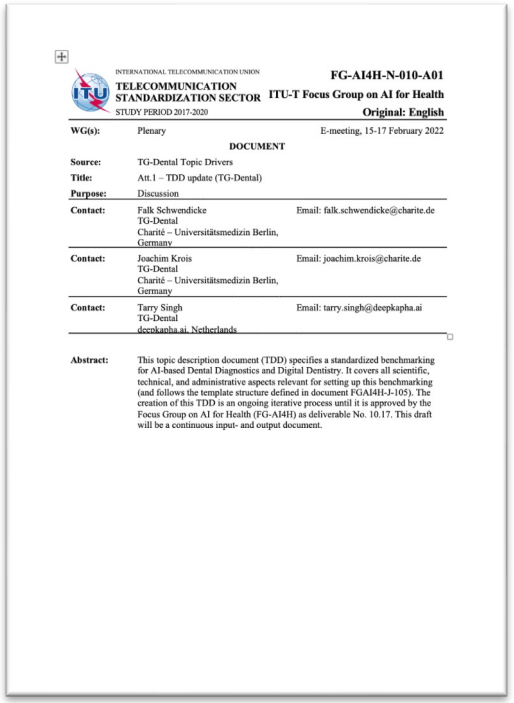
WGs create guidance documents for AI-for-health

- **1000+ pages of standardization/guidance** documentation have been produced **by FG-AI4H**
- ***WHO ethics experts* published** 'Ethics and Governance of AI for health' in July '21
- **In the pipeline:**
  - *WG-Regulation*: Outline **key regulatory considerations**
  - *WG-Clinical Evaluation*: Developed a **framework** for **clinical evaluation for AI systems in health**

Source: WHO, https://www.who.int/publications/i/item/9789240029200

Key approach A – Documentation & Guidelines
Creating guidance documents and standards for AI-for-health





INTERNATIONAL TELECOMMUNICATION UNION
TELECOMMUNICATION STANDARDIZATION SECTOR
STUDY PERIOD 2017-2020

FG-AI4H-N-010-A01
ITU-T Focus Group on AI for Health
Original: English

WG(s):	Plenary	E-meeting, 15-17 February 2022

DOCUMENT

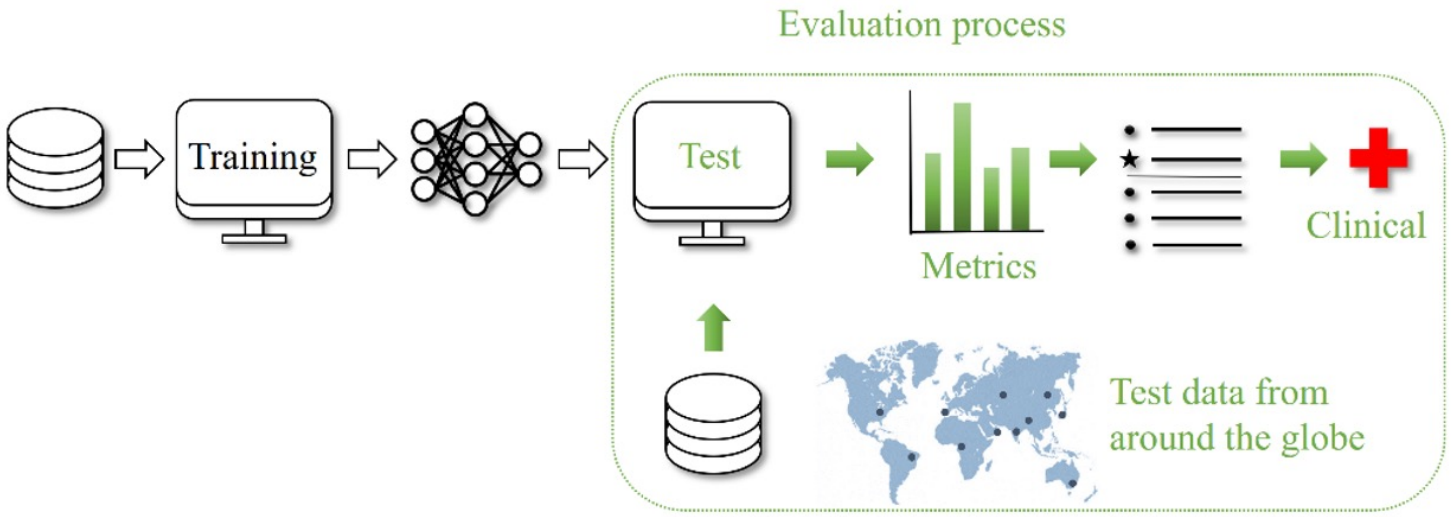
Source:	TG-Dental Topic Drivers	
Title:	Att.1 – TDD update (TG-Dental)	
Purpose:	Discussion	
Contact:	Falk Schwendicke TG-Dental Charité – Universitätsmedizin Berlin, Germany	Email: falk.schwendicke@charite.de
Contact:	Joachim Krois TG-Dental Charité – Universitätsmedizin Berlin, Germany	Email: joachim.krois@charite.de
Contact:	Tarry Singh TG-Dental deepkapha.ai, Netherlands	Email: tarry.singh@deepkapha.ai

Abstract: This topic description document (TDD) specifies a standardized benchmarking for AI-based Dental Diagnostics and Digital Dentistry. It covers all scientific, technical, and administrative aspects relevant for setting up this benchmarking (and follows the template structure defined in document FGAI4H-J-105). The creation of this TDD is an ongoing iterative process until it is approved by the Focus Group on AI for Health (FG-AI4H) as deliverable No. 10.17. This draft will be a continuous input- and output document.

Topic groups are dedicated to

- Specific health use cases (24 by Sept ‘22)
- Bringing together domain **experts** & **data**
- Proposing **procedures to benchmark** AI models for a given task within a health topic

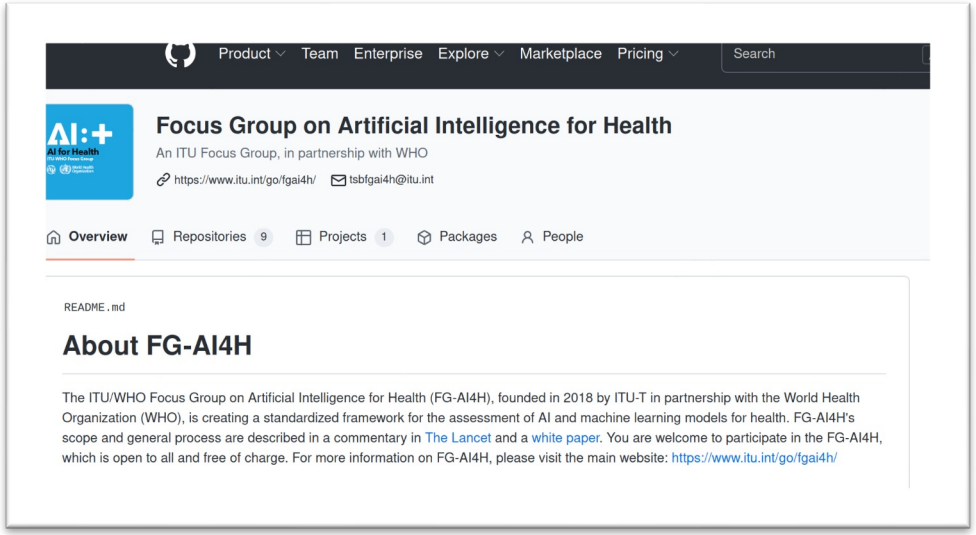
B – Software and assessment platform



Source: ITU Del. 7.0

- **Open code initiative** by FGAI4H's WG-DASH/WG-DAISAM: https://github.com/fg-ai4h
- Develop end-to-end **assessment/benchmarking platform** with **standardized test procedures** and **metrics** on high-quality, representative, undisclosed test data

B – Software and assessment platform

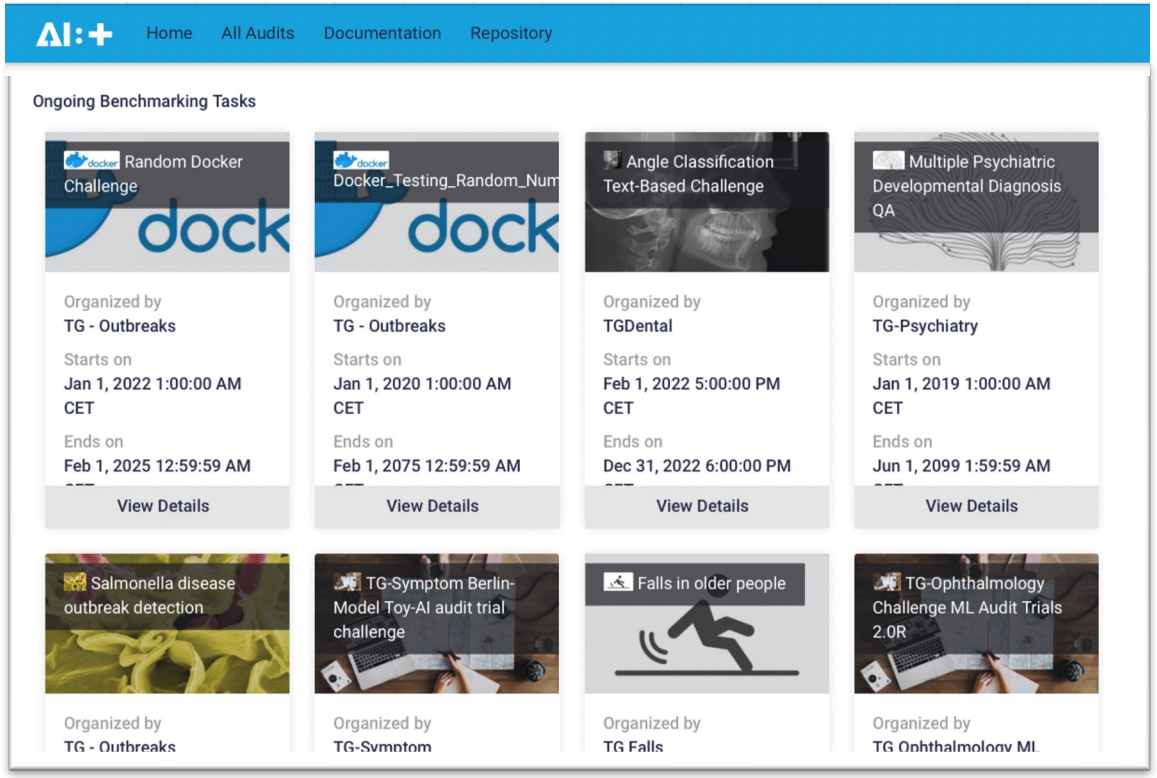


- Involve **developers**, **regulators**, **medical professionals** & develop **software tools** for:

Test data acquisition | **Test data storage** | **Test data annotation** | **AI predict-ion** | **Assessment of AI prediction** | **Report of results**

Source: https://github.com/fg-ai4h, FG-AI4H OCI

B – Software and assessment platform



https://health.aiaudit.org/

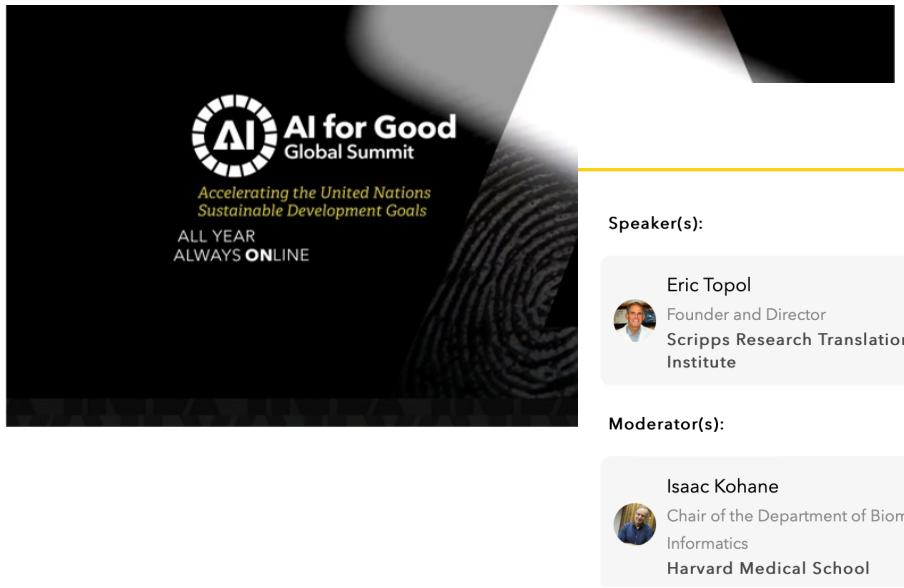
AI auditing by FG-AI4H:

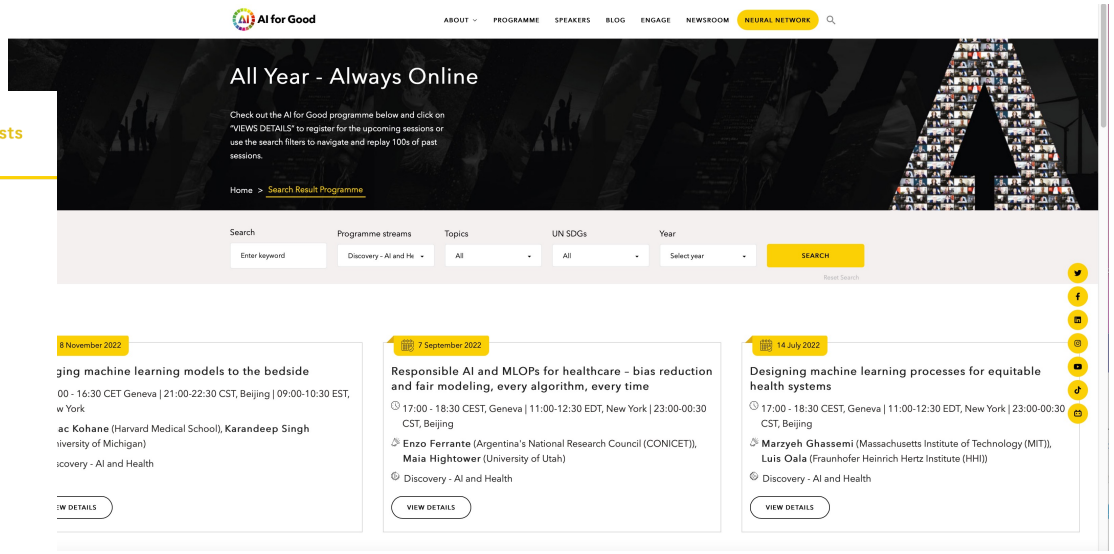
- Identify & define methods for **data & AI assessment**
- **Best practices** for AI auditing & quality control along entire AI life cycle
- **Verification & validation** of technical/clinical/regulatory/ethical requirements for AI following a structured audit process
- **Publications:**
  - **ML4H auditing: From paper to practice**. *PMLR*, 2020. In Machine Learning for Health [Link]
  - **ML for health: algorithm auditing & quality control**. Journal of medical systems, 2021 [Link]

Source: https://health.aiaudit.org/

C – Implementation and Scale-up

Outreach & collaboration on global health





Source: https://aiforgood.itu.int/eventcat/discovery-ai-and-health/

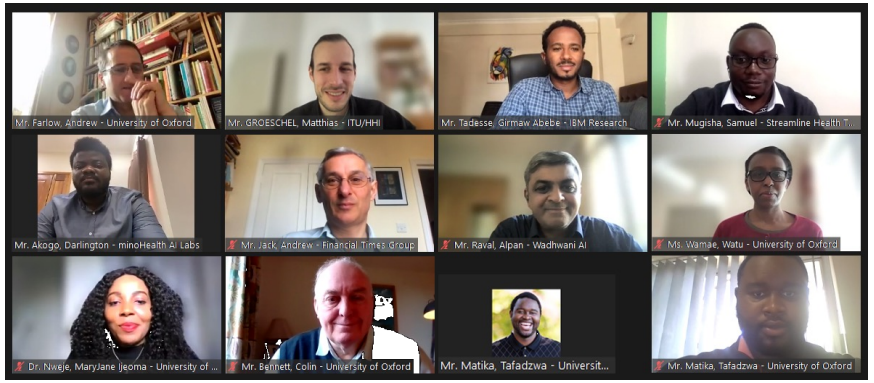
- **Webinars**: > 20 webinars with >7000 views and renowned speakers e.g., **Isaac Kohane** (Harvard Medical School), **Regina Barzilay** (Massachusetts Institute of Technology, MIT), **Uri Shalit** (Technion - Israel Institute of Technology, Faculty of Industrial Engineering and Management), **Eric Topol** (Scripps Research Translational Institute), …

- **Workshops**: > 5 international workshops organized in collaboration with U of Oxford

all webinars: https://aiforgood.itu.int/eventcat/discovery-ai-and-health/

C – Implementation and Scale-up

Research on global health



Source: https://www.itu.int/en/ITU-T/focusgroups/ai4h/Documents/Digital%20Health%20and%20AI%20Report_19_March_2022.pdf; ITU

- Reports on (1) State of Digital Tools in Africa, (2) Catalyzing Innovation in **Global Health,** (3) **Equitable Data Sharing** (more info: link)
- Conceptualize and rethink how Hackathons in Global Health are conducted

FG-AI4H extension, publication strategy, transition into ITU/WHO global health initiative

- FG-AI4H extension until autumn 2023
- **Publishing strategy**, finish deliverables
- Transition to **ITU/WHO global health initiative**
- Discussions about publishing+transition with all members at this meeting

Overview next three days

1. Updates working groups & deliverables
2. Open Code Initiative
3. Discussions: transition to ITU/WHO Global Initiative on AI for Health
4. Topic Group sessions Schedule link on https://itu.int/go/fgai4h/

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- WHO and ITU Establish Benchmarking Process for AI in Health. *The Lancet* (2019). https://doi.org/10.1016/S0140-6736(19)30762-7
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- Toward Global Validation Standards for Health AI. *IEEE CSM* (2020). https://doi.org/10.1109/MCOMSTD.001.2000006
- Machine Learning for Health: Algorithm Auditing & Quality Control. *Journal of Medical Systems* **45**(12), 105 (2021). https://doi.org/10.1007/s10916-021-01783-y
- Full documentation on http://itu.int/go/fgai4h/collab