|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ITU Logo | INTERNATIONAL TELECOMMUNICATION UNION  **TELECOMMUNICATION STANDARDIZATION SECTOR**  STUDY PERIOD 2017-2020 | | FG-AI4H-L-004 | |
| **ITU-T Focus Group on AI for Health** | |
| **Original: English** | |
| **WG(s):** | | Plenary | E-meeting, 19-21 May 2021 | |
| **DOCUMENT** | | | | |
| **Source:** | | Editors | | |
| **Title:** | | Updated DEL10: AI4H use cases: Topic Description Documents | | |
| **Purpose:** | | Discussion | | |
| **Contact:** | | Eva Weicken Fraunhofer HHI, Germany | | Email: [eva.weicken@hhi.fraunhofer.de](mailto:eva.weicken@hhi.fraunhofer.de) |
| **Contact:** | | Monique Kuglitsch Fraunhofer HHI, Germany | | Email: [monique.kuglitsch@hhi.fraunhofer.de](mailto:monique.kuglitsch@hhi.fraunhofer.de) |
| **Contact:** | | Markus Wenzel Fraunhofer HHI, Germany | | Email: [markus.wenzel@hhi.fraunhofer.de](mailto:markus.wenzel@hhi.fraunhofer.de) |

|  |  |
| --- | --- |
| **Abstract:** | This document provides an overview of the ITU/WHO Focus Group on AI for Health (FG-AI4H) "AI4H use cases: Topic Description Documents". Each use case is represented by a topic group that is dedicated to a specific health topic in the context of AI. The topic group proposes a procedure to benchmark AI models developed for a special task within this health topic. All members of a topic group create a topic description document (TDD) that contains information about the structure, operations, features, and considerations of the specific health topic. This document constitutes deliverable No. 10 (DEL.10\_0) and serves as an introduction to the topic groups and their topic description documents. |

**Call for participation**

If you are interested in contributing to DEL.10\_0 "*AI4H use cases: Topic Description Documents*" you are encouraged to contact Eva Weicken ([eva.weicken@hhi.fraunhofer.de](mailto:eva.weicken@hhi.fraunhofer.de)) and the FG-AI4H secretariat ([tsbfgai4h@itu.int](mailto:tsbfgai4h@itu.int)). We would appreciate if you can briefly introduce yourself and your relevant expertise.

Change Notes

This document DEL 10\_0 "AI4H use cases: Topic Description Documents" provides the status of the topic groups and their TDDs. Previous versions include:

* Version 4 (DEL 10\_0, E-meeting "K", 27–29 January 2021; introduction of the updated TDD-template ‘FG-AI4H J-105’)
* Version 3 (DEL 10\_0, E-meeting "J", 29 September–02 October 2020)
* Version 2 (DEL 10\_0, E-meeting "I", 7–8 May 2020)
* Version 1 (FG-AI4H-H-210, Brasilia meeting "H", 21–24 January 2020)
* Version 0 with an initial outline (FG-AI4H-G-210, New Delhi meeting "G", 11–15 November 2019)

**CONTENTS**

| Page |
| --- |
| [1 Scope 4](#_Toc71896960)  [2 References 4](#_Toc71896961)  [3 Terms and definitions 5](#_Toc71896962)  [4 Abbreviations 5](#_Toc71896963)  [5 Introduction 6](#_Toc71896964)  [6 TDD-template update – details about development 8](#_Toc71896965)  [7 Structure 9](#_Toc71896966)  [8 Resources and latest document versions of all topic groups 10](#_Toc71896967)  [8.1 Cardiovascular disease risk prediction (TG-Cardio) 10](#_Toc71896968)  [8.2 Dermatology (TG-Derma) 10](#_Toc71896969)  [8.3 Diagnosis of bacterial infection and anti-microbial resistance (AMR) (TG-Bacteria) 11](#_Toc71896970)  [8.4 Falls among the elderly (TG-Falls) 11](#_Toc71896971)  [8.5 Histopathology (TG-Histo) 11](#_Toc71896972)  [8.6 Malaria detection (TG-Malaria) 11](#_Toc71896973)  [8.7 Maternal and child health (TG-MCH) 11](#_Toc71896974)  [8.8 Neurological disorders (TG-Neuro) 11](#_Toc71896975)  [8.9 Ophthalmology (TG-Ophthalmo) 12](#_Toc71896976)  [8.10 Outbreak detection (TG-Outbreaks) 12](#_Toc71896977)  [8.11 Psychiatry (TG-Psy) 12](#_Toc71896978)  [8.12 Radiology (TG-Radiology) 12](#_Toc71896979)  [8.13 Snakebite and snake identification (TG-Snake) 12](#_Toc71896980)  [8.14 Symptom assessment (TG-Symptom) 12](#_Toc71896981)  [8.15 Tuberculosis (TG-TB) 13](#_Toc71896982)  [8.16 Volumetric chest computed tomography (TG-DiagnosticCT) 13](#_Toc71896983)  [8.17 Dental diagnostics and digital dentistry (TG-Dental) 13](#_Toc71896984)  [8.18 AI-based detection of falsified medicine (TG-FakeMed) 13](#_Toc71896985)  [8.19 Primary and secondary Diabetes risk prediction (TG-Diabetes) 13](#_Toc71896986)  [8.20 AI and endoscopy (TG-Endoscopy) 13](#_Toc71896987)  [8.21 Musculoskeletal Medicine (TG-MSK) 14](#_Toc71896988) |

**List of Tables**

| [Table 1: Overview of the 21 topic groups and their corresponding deliverables 9](#_Toc71896989) |
| --- |
|  |

**List of Figures**

| Page |
| --- |
| [Figure 1: Topic groups and the TDD/deliverables 6](#_Toc71896990)  [Figure 2: Interaction between topic groups ('vertical') and working groups ('horizontal') 8](#_Toc71896991) |

FG-AI4H Deliverable 10\_0

AI4H use cases - Topic Description Documents

Summary

The deliverable No. 10\_0 *"AI4H use cases: Topic Description Documents"* of the ITU/WHO Focus Group on Artificial Intelligence for Health (FG-AI4H) serves as an introduction to the 21 use cases, respectively topic groups and their deliverables. The topic groups involve stakeholders from the medical field and ML/AI domain who are dedicated to specific health topics that could benefit from AI. Under the guidance of the topic group driver, the members of each topic group develop a topic description document (TDD) that contains all requirements of the AI-related benchmarking for the respective health topic. The TDD describes the background of the health topic in the context of AI and the structure, operations, and considerations of the topic group. This document provides an overview of the various TDDs developed by FG-AI4H topic groups.

In total, 21 topic groups were established by May 2021. The topic groups represent various health topics in the context of AI including medical fields, e.g., histopathology, cardiology, neurology, and radiology. An overview of all topic groups and their TDDs, are shown in table 1.

Each topic group works on a TDD that represents the ongoing work of the benchmarking process for the specific health topic. All topic groups use the same TDD-template which reflects the requirements for the benchmarking process defined by FG-AI4H working groups. The TDD-template was updated by meeting ‘J’ and is allocated as [FG-AI4H-J-105](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/docs/FGAI4H-J-105.docx). The development of the TDD is an iterative process and updates are provided to each meeting.

The consistent TDD structure also facilitates an internal and external review process of the TDDs before their final approval and publication.

# Scope

This document introduces the topic description documents of the ITU/WHO Focus Group on AI for Health. Further, it provides an overview of the status of the various topic groups, their TDDs and the TDD template (including updates).

# References

[DEL10\_01] FG-AI4H Deliverable DEL10\_01, C*ardiovascular disease management (TG-Cardio).* Last found: including ,[DEL10\_01](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame.aspx?sourcedoc=%7B8233FF30-5E30-411E-9927-972532A54F29%7D&file=FGAI4H-K-006-A01.docx&action=default&CT=1620312049714&OR=DocLibClassicUI) including the *subtopic: Cardiovascular disease risk prediction using AI* (same as meeting H)

[DEL10\_02] FG-AI4H Deliverable DEL10\_02, *Dermatology (TG-Derma).* Last found: [DEL10\_02](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame2.aspx?sourcedoc=%7B96431901-CEEC-4A6B-AEAE-74AD8665EBB8%7D&file=FGAI4H-K-007-A01.docx&action=default&CT=1620312363175&OR=DocLibClassicUI) (same as meeting E)

[DEL10\_03] FG-AI4H Deliverable DEL10\_03, *Diagnosis of bacterial infection and anti-microbial resistance (TG-AMR).* Last found: [DEL10\_03](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame.aspx?sourcedoc=%7B65601426-CBB6-46E8-B2A4-CE8564388F9E%7D&file=FGAI4H-J-008-A01.docx&action=default) (initial TDD, same as meeting J)

[DEL10\_04] FG-AI4H Deliverable DEL10\_04, *Falls among the elderly (TG-Falls).* Last found: [DEL\_10\_04](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame2.aspx?sourcedoc=%7BB68BC391-F094-4FFB-87A4-D7719F14D80D%7D&file=FGAI4H-K-012-A01.docx&action=default&CT=1620313432234&OR=DocLibClassicUI)

[DEL10\_05] FG-AI4H Deliverable DEL10\_05, *Histopathology (TG-Histo).* Last found: [DEL10\_05](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame.aspx?sourcedoc=%7B66457851-9BAA-4951-926D-C88747B972A0%7D&file=FGAI4H-J-013-A01.docx&action=default) (same as meeting I)

[DEL10\_06] FG-AI4H Deliverable DEL10\_06, *Malaria detection (TG-Malaria).* Last found: [DEL10\_06](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame.aspx?sourcedoc=%7B2E151855-B40E-44D9-8D0C-490BA6EEE2B1%7D&file=FGAI4H-K-014-A01.docx&action=default&CT=1620313541509&OR=DocLibClassicUI)

[DEL10\_07] FG-AI4H Deliverable DEL10\_07, *Maternal and child health (TG-MCH).* Last found: [DEL10\_07](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame2.aspx?sourcedoc=%7B4F9E25F6-0612-4E8D-9C36-C4C66E6DFA14%7D&file=FGAI4H-K-015-A01.docx&action=default&CT=1620313597034&OR=DocLibClassicUI) (same as meeting H)

[DEL10\_08] FG-AI4H Deliverable DEL10\_08, *Neurological disorders (TG-Neuro).* Last found: [DEL10\_08](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame2.aspx?sourcedoc=%7B0EE90840-B8E6-4828-B7B1-ABA3F05CBAFB%7D&file=FGAI4H-K-016-A01.docx&action=default&CT=1620313652433&OR=DocLibClassicUI)

[DEL10\_09] FG-AI4H Deliverable DEL10\_09, *Ophthalmology (TG-Ophthalmo).* Last found: [DEL10\_09](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame2.aspx?sourcedoc=%7BB133F60C-AD2C-4655-8910-8BFD8480087D%7D&file=FGAI4H-K-017-A01.docx&action=default&CT=1620313719598&OR=DocLibClassicUI)

[DEL10\_10] FG-AI4H Deliverable DEL10\_10, *Outbreak detection (TG-Outbreaks).*Last found: [DEL10\_10](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame2.aspx?sourcedoc=%7B9B5EE32B-E19D-4457-9498-3947FFDF9EFB%7D&file=FGAI4H-K-018-A01.docx&action=default&CT=1620313765786&OR=DocLibClassicUI)

[DEL10\_11] FG-AI4H Deliverable DEL10\_11, *Psychiatry (TG-Psy).* Last found: [DEL10\_11](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame.aspx?sourcedoc=%7BB2ED6EDE-1369-4792-9053-10B60870EEB1%7D&file=FGAI4H-K-019-A01.docx&action=default&CT=1620381689649&OR=DocLibClassicUI)

[DEL10\_12] FG-AI4H Deliverable DEL10\_12, *Radiology (TG-Radiology).* Last found: [DEL\_10\_12](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame2.aspx?sourcedoc=%7B5A70AC3C-A5F0-4753-B951-0FE3FD293BDC%7D&file=FGAI4H-K-023-A01.docx&action=default&CT=1620381771440&OR=DocLibClassicUI)

[DEL10\_13] FG-AI4H DEL10\_13, *Snakebite and snake identification (TG-Snake).* Last found: [DEL10\_13](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame.aspx?sourcedoc=%7B80AAFCDC-8894-4030-AB4F-836652AE36D9%7D&file=FGAI4H-K-020-A01.docx&action=default&CT=1620381824183&OR=DocLibClassicUI)

[DEL10\_14] FG-AI4H Deliverable DEL10\_14, *Symptom assessment (TG-Symptom).* Last found: [DEL10\_14](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame.aspx?sourcedoc=%7B50C51BD7-2067-40D3-B369-432AAA8BB38C%7D&file=FGAI4H-K-021-A01.docx&action=default&CT=1620381859125&OR=DocLibClassicUI)

[DEL10\_15] FG-AI4H Deliverable DEL10\_15, *Tuberculosis (TG-Tuberculosis)*. Last found: [DEL10\_15](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame.aspx?sourcedoc=%7B25AF99D8-6CDD-4378-910F-508822338628%7D&file=FGAI4H-K-022-A01.docx&action=default&CT=1620381922812&OR=DocLibClassicUI)

[DEL10\_16] FG-AI4H Deliverable DEL10\_16, *Volumetric chest computed tomography (TG-Diagnostic CT).* Last found: [DEL10\_16](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame.aspx?sourcedoc=%7BA574FC32-6D7C-479D-9D1D-D109B4B19346%7D&file=FGAI4H-K-009-A01.docx&action=default&CT=1620381968100&OR=DocLibClassicUI)

[DEL10\_17] FG-AI4H Deliverable DEL10\_17, *Dental diagnostics and digital dentistry (TG-Dental).* Last found: [DEL10\_17](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame.aspx?sourcedoc=%7B58BA461E-69C0-4C17-B180-6B836F27194E%7D&file=FGAI4H-K-010-A01.docx&action=default&CT=1620382008049&OR=DocLibClassicUI)

[DEL10\_18] FG-AI4H Deliverable DEL10\_18, *AI-based detection of falsified medicine (TG-FakeMed).* Last found:[DEL10\_18](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame2.aspx?sourcedoc=%7BEB5A6485-3705-4337-B84B-D56EF269820C%7D&file=FGAI4H-K-011-A01.docx&action=default&CT=1620382055275&OR=DocLibClassicUI) (same as meeting J)

[DEL10\_19] FG-AI4H Deliverable DEL10\_19, *Primary and secondary Diabetes risk prediction (TG-Diabetes).* Last found: [DEL10\_19](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame2.aspx?sourcedoc=%7B51C0685C-D12D-4D52-A140-7D8B1634E1E3%7D&file=FGAI4H-K-024-A01.docx&action=default&CT=1620382133330&OR=DocLibClassicUI)

[DEL10\_20] FG-AI4H Deliverable DEL10\_20, *AI for endoscopy (TG-Endoscopy).* Last found: [DEL10\_20](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame2.aspx?sourcedoc=%7BF2EDF390-01B1-4EF7-86B1-0104BD553C57%7D&file=FGAI4H-K-025-A01.docx&action=default&CT=1620382172769&OR=DocLibClassicUI)

[DEL10\_21] FG-AI4H Deliverable DEL10\_21, *AI for Musculoskeletal medicine* *(TG-MSK).* Last found:[DEL10\_21](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame2.aspx?sourcedoc=%7BC6CB2249-662C-4523-BC25-45E08C86CA8C%7D&file=FGAI4H-K-026-A01.docx&action=default&CT=1620382235231&OR=DocLibClassicUI)

NOTE: Literature references are listed in the bibliography.

# Terms and definitions

This document does not rely on terms defined elsewhere. It also does not define any new terms.

# Abbreviations

|  |  |
| --- | --- |
| AI | Artificial Intelligence |
| AI4H | Artificial Intelligence for Health |
| CE  CfP | Clinical evaluation  Call for Participation (to join a Topic Group) |
| DAISAM  DASH  FG-AI4H | Data and AI solution assessment methods  Data and AI solution handling  Focus Group on Artificial Intelligence for Health |
| ITU | International Telecommunication Union |
| MCH | Mother and child health |
| ML | Machine Learning |
| MSK  RC | Musculoskeletal  Regulatory considerations |
| TDD | Topic Description Document |
| TG | Topic Group |
| WG | Working Group |
| WHO | World Health Organization |

# Introduction

This draft gives an overview of the various topic description documents developed by the ITU/WHO Focus Group on AI for Health, which is a collaboration between the International Telecommunication Union (ITU) and the World Health Organization (WHO). The initiative is creating a framework for the standardized benchmarking of AI technology for health and operates at the interface of multiple fields, including AI, machine learning, medicine, public health, regulation, statistics, evaluation, and ethics.

The activities of the initiative include topic groups that take charge of specific health domains with corresponding AI/ML tasks. Each topic group develops a topic description document (TDD) under the guidance of a topic driver. Each TDD introduces the health topic being explored, explains the role of AI within this context, and proposes a procedure to benchmark AI models developed for a specific task. The topic description documents also provide information about the structure, operations, features, and considerations of the topic groups. The topic description documents are written in a collaborative effort and are iteratively improved over time by all members of a topic group. Topic group members are stakeholders from the medical field and the AI/ML domain dedicated to specific health topics that could benefit from AI.

A picture containing diagram

Description automatically generated

Figure 1: Topic groups and the TDD/deliverables

A generic outline of the topic description documents was proposed in the TDD-template document [FGAI4H-C-105](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame.aspx?sourcedoc=%7B50606D7D-9BF3-4019-8B64-23E4D5BABBE6%7D&file=FGAI4H-C-105.docx&action=default) and has been updated by meeting ‘J’ – [FG-AI4H-J-105](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/docs/FGAI4H-J-105.docx). The latter document serves as the current TDD-template and is applicable for all topic groups.

The TDD content can be categorized into four components:

* *Topic background*: What is the health topic considered? Is this of relevance (e.g., does it affect a large and diverse transect of the global population and/or represent a challenge to the healthcare community)? What is the current gold standard for addressing this health topic? Could AI provide a tangible improvement (e.g., in terms of better care, better results, and/or savings in cost and time)? Are there existing AI solutions for this health topic? Has already been worked towards the benchmarking of the aforementioned solutions?
* *Topic group features*: What subtopics belong to the topic group? How do members of the topic group participate and interact (e.g., via online communication, regular meetings)? What is the status update for this topic group to each meeting?
* *Topic group operations*: How will the benchmarking be executed (e.g., with regard to input/output data, data labelling, test dataset acquisition, scores/metrics, architecture, and data sharing policies)? How will the outcome of the benchmarking be disseminated? How will feedback be implemented? Are there existing benchmarking processes of AI systems that are of interest for the benchmarking of this topic group (e.g., publications, frameworks)? How is the retirement after benchmarking of the AI task managed?
* *Topic group considerations*: How are ethics and legalities addressed by the topic group? What are the regulatory considerations that apply for this topic group (e.g., what are existing regulatory frameworks? Which regulatory requirements are used for the benchmarking of the AI4H system in this topic group?)

In the end, a Declaration of Conflict of Interest by each contributor to this document is provided.

As progress is made within the topic groups, revised versions of the topic description documents are inevitable. These are submitted as input documents and are presented at each meeting by the topic group driver. The changes are discussed and integrated into the improved version.

Parallel to the topic groups, there are working groups that are dedicated to overarching themes that affect all topic groups in a specific aspect of an AI health application, for example, the *Working Group on Regulatory Considerations on AI for Health* and the *Working Group on Ethical Considerations on AI for Health*. Working groups also develop definitions of best practices, establish processes and related policies, define ways to successfully benchmark AI for health algorithms and create reference documents. All these considerations are important for the benchmarking process of all topic groups in the context of the special health topic and are also considered in their TDD.

Figure 2 gives an overview of the interaction between FG-AI4H topic groups ('vertical') and working groups ('horizontal').

Table

Description automatically generated

Figure 2: Interaction between topic groups ('vertical') and working groups ('horizontal')

# TDD-template update – details about development

As of meeting 'H', FG-AI4H members resolved an update of the generic TDD template [FGAI4H-C-105](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame.aspx?sourcedoc=%7B50606D7D-9BF3-4019-8B64-23E4D5BABBE6%7D&file=FGAI4H-C-105.docx&action=default) that became obvious during the formation process of the TDD and the development and activities within FG-AI4H working groups and topic groups over time. The objective is to create a consistent structure of the TDD template that works for all topic groups and also facilitates the internal and external review process of the TDDs.

A revised version of the TDD template document was submitted as "Draft updated TDD template," allocated as [FGAI4H-I-004](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame.aspx?sourcedoc=%7B6701AD5B-8504-4C34-B286-D0388FDAB7B9%7D&file=FGAI4H-I-004.docx&action=default) to meeting 'I' (E-meeting) in May 2020, including additional sections, change notes, mentioning of the contributors, restructuring of some sections, lists of figures and tables, consideration of health economics and regulation, and a list of optional sub-topics.

During this meeting, FG-AI4H members agreed on further adjustments and more detailed information about the requirements defined by the working groups and their output documents (deliverables 01 – 09) on regulatory - and ethical considerations, on clinical evaluation and on all aspects regarding data (e.g., data acquisition, handling, annotation, storing). The feedback of the deliverable editors (deliverables 01 – 09) has then been implemented in the TDD-template update and the final document has been submitted to FG-AI4H meeting 'J' (E-meeting, September 2020). After passing the FG-AI4H approval process, the updated TDD-template was finally allocated as [FG-AI4H-J-105](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/docs/FGAI4H-J-105.docx).

The four components of the TDD (TG-background, TG-features, TG-operations, TG-considerations) described before in section 5 have been complemented and updated.

Updates include:

* a new structure with more guidance
* an updated table of contents
* new sections, e.g., regulatory section
* updated sections, e.g., ethical considerations section
* new structuring of the subtopics
* new structuring and description of the benchmarking versions
* a more detailed description of the benchmarking process

# Structure

This document DEL 10\_0 "AI4H use cases: Topic Description Documents" serves as an introduction to a set of documents that describe several use cases of a specific health topic in the context of AI.

Table 1 gives an overview of the use cases/topic groups, their topic group drivers, and the document number. Starting topic groups might not have a TDD document number yet. As of May 2021, there were 21 draft versions of topic description documents (out of 21 topic groups in total) published on the FG-AI4H website.

Table 1: Overview of the 21 topic groups and their corresponding deliverables

| N° | Topic group | Topic driver(s) | Document (latest version) | Comment |
| --- | --- | --- | --- | --- |
| 10\_01 | Use of AI in cardiovascular disease management (TG-Cardio)   * including clinical predictions sub-topic: *cardiovascular disease* *risk prediction* | Benjamin Muthambi | K-006-A01  (*including subtopic cardiovascular risk prediction*) | Needs content for subtopic on *cardiac image analysis*.  *Pending transfer to updated TDD-template* |
| 10\_02 | Dermatology (TG-Derma) | (Maria Vasconcelos)  > Weihong Huang | [same as meeting E]  K-007-A01 | Change of TG-drivers  *Pending transfer to updated TDD-template* |
| 10\_03 | Diagnosis of bacterial infection and anti-microbial resistance (TG-Bacteria) | Nada Malou | [initial TDD]  K-008-A01 | *Pending transfer to updated TDD-template* |
| 10\_04 | Falls among the elderly (TG-Falls) | (Inês Sousa)  > Pierpaolo Palumbo | K-012-A01 | Temporary change of TG-drivers |
| 10\_05 | Histopathology (TG-Histo) | Frederick Klauschen | [same as meeting I]  K-013-A01 | *Pending transfer to updated TDD-template* |
| 10\_06 | Malaria detection (TG-Malaria) | Rose Nakasi | K-014-A01 |  |
| 10\_07 | Maternal and Child Health (TG-MCH) | Raghu Dharmaraju & Alexandre Chiavegatto Filho | [same as meeting H]  K-015-A01 | *Pending transfer to updated TDD-template* |
| 10\_08 | Neurological disorders (TG-Neuro) | Marc Lecoultre | K-016-A01 | *Pending transfer to updated TDD-template* |
| 10\_09 | Ophthalmology (TG-Ophthalmo) | Arun Shroff | K-017-A01 | *Pending transfer to updated TDD-template* |
| 10\_10 | Outbreak detection (TG-Outbreaks) | Stéphane Ghozzi &  Auss Abbood | K-018-A01 |  |
| 10\_11 | Psychiatry (TG-Psy) | Nicolas Langer | K-019-A01 |  |
| 10\_12 | AI for Radiology (TG-Radiology) | Darlington Ahiale Akogo | K-023-A01 | *Pending transfer to updated TDD-template* |
| 10\_13 | Snakebite and snake identification (TG-Snake) | Rafael Ruiz de Castañeda | [same as meeting I]  K-020-A01 | *Pending transfer to updated TDD-template* |
| 10\_14 | Symptom assessment (TG-Symptom) | Henry Hoffmann | K-021-A01 |  |
| 10\_15 | Tuberculosis (TG-TB) | Manjula Singh | K-022-A01 | *Pending transfer to updated TDD-template* |
| 10\_16 | Volumetric chest computed tomography (TG-DiagnosticCT) | Kuan Chen | K-009-A01 | *Pending transfer to updated TDD-template* |
| 10\_17 | Dental diagnostics and digital dentistry (TG-Dental) | Falk Schwendicke &  Joachim Krois | K-010-A01 |  |
| 10\_18 | Falsified Medicine (TG-FakeMed) | Franck Verzefé | [same as meeting J]  K-011-A01 | *Pending transfer to updated TDD-template* |
| 10\_19 | Primary and secondary diabetes prediction (TG-Diabetes) | Andrés Valdivieso | K-024-A01 | *Pending transfer to updated TDD-template* |
| 10\_20 | AI for endoscopy (TG-Endoscopy) | Jianrong Wu | K-025-A01 |  |
| 10\_21 | Musculoskeletal Medicine (TG-MSK) | Yura Perov | K-026-A01 |  |

# Resources and latest document versions of all topic groups

This section contains links to the latest versions of the topic description documents, the "Call for Topic Group Participation" (CfTGP), the respective topic driver, and to the individual collaboration sites of the topic groups.

## Cardiovascular disease risk prediction (TG-Cardio)

*Topic description document* *(latest version):* [DEL10\_01](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame.aspx?sourcedoc=%7B8233FF30-5E30-411E-9927-972532A54F29%7D&file=FGAI4H-K-006-A01.docx&action=default&CT=1620312049714&OR=DocLibClassicUI)

*CfP:* <https://www.itu.int/en/ITU-T/focusgroups/ai4h/Documents/tg/CfP-TG-Cardio.pdf>

*Topic driver:* Benjamin Muthambi (Watif Health, South Africa, [brm5@caa.columbia.edu](mailto:brm5@caa.columbia.edu))

*Collaboration site:* <https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/tg/SitePages/TG-Cardio.aspx>

## Dermatology (TG-Derma)

*Topic description document (latest version):* [DEL10\_02](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame2.aspx?sourcedoc=%7B96431901-CEEC-4A6B-AEAE-74AD8665EBB8%7D&file=FGAI4H-K-007-A01.docx&action=default&CT=1620312363175&OR=DocLibClassicUI)

*CfP:* <https://www.itu.int/en/ITU-T/focusgroups/ai4h/Documents/tg/CfP-TG-Derma.pdf>

*Topic driver:*  Weihong Huang (Xiangya Hospital Central South University, China, [whuangcn@qq.com](mailto:whuangcn@qq.com))

*Collaboration site:* <https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/tg/SitePages/TG-Derma.aspx>

## Diagnosis of bacterial infection and anti-microbial resistance (AMR) (TG-Bacteria)

*Topic description document (initial version):* [DEL10\_03](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame.aspx?sourcedoc=%7B65601426-CBB6-46E8-B2A4-CE8564388F9E%7D&file=FGAI4H-J-008-A01.docx&action=default)

*Call for participation: Awaiting CfTGP*

*Topic driver:* Nada Malou (MSF, France, [nada.malou@paris.msf.org](mailto:nada.malou@paris.msf.org))

*Collaboration site:* <https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/tg/SitePages/TG-Bacteria.aspx>

## Falls among the elderly (TG-Falls)

*Topic description document (latest version):* [DEL\_10\_04](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame2.aspx?sourcedoc=%7BB68BC391-F094-4FFB-87A4-D7719F14D80D%7D&file=FGAI4H-K-012-A01.docx&action=default&CT=1620313432234&OR=DocLibClassicUI)

*CfP:* <https://www.itu.int/en/ITU-T/focusgroups/ai4h/Documents/tg/CfP-TG-Falls.pdf>

*Topic driver(s):*

* Inês Sousa (Fraunhofer Portugal, Portugal, [ines.sousa@fraunhofer.pt](mailto:ines.sousa@fraunhofer.pt))
* Pierpaolo Palumbo (University of Bologna, Italy, [pierpaolo.palumbo@unibo.it](mailto:pierpaolo.palumbo@unibo.it))

*Collaboration site:* <https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/tg/SitePages/TG-Falls.aspx>

## Histopathology (TG-Histo)

*Topic description document* *(latest version):* [DEL10\_05](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame.aspx?sourcedoc=%7B66457851-9BAA-4951-926D-C88747B972A0%7D&file=FGAI4H-J-013-A01.docx&action=default)

*CfP:* <https://www.itu.int/en/ITU-T/focusgroups/ai4h/Documents/tg/CfP-TG-Histo.pdf>

*Topic driver:* Frederick Klauschen (Charité Berlin, Germany, [frederick.klauschen@charite.de](mailto:frederick.klauschen@charite.de))

*Collaboration site:* <https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/tg/SitePages/TG-Histo.aspx>

## Malaria detection (TG-Malaria)

*Topic description document (latest version):* [DEL10\_06](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame.aspx?sourcedoc=%7B2E151855-B40E-44D9-8D0C-490BA6EEE2B1%7D&file=FGAI4H-K-014-A01.docx&action=default&CT=1620313541509&OR=DocLibClassicUI)

*CfP:* <https://www.itu.int/en/ITU-T/focusgroups/ai4h/Documents/tg/CfP-TG-Malaria.pdf>

*Topic driver:* Rose Nakasi (Makerere University, Uganda, [g.nakasi.rose@gmail.com](mailto:g.nakasi.rose@gmail.com))

*Collaboration site:* <https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/tg/SitePages/TG-Malaria.aspx>

## Maternal and child health (TG-MCH)

*Topic description document (latest version):* [DEL10\_07](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame2.aspx?sourcedoc=%7B4F9E25F6-0612-4E8D-9C36-C4C66E6DFA14%7D&file=FGAI4H-K-015-A01.docx&action=default&CT=1620313597034&OR=DocLibClassicUI)

*CfP:* <https://www.itu.int/en/ITU-T/focusgroups/ai4h/Documents/tg/CfP-TG-MCH.pdf>

*Topic drivers:*

* Raghu Dharmaraju (Wadhwani AI, India, [rdharmaraju@gmail.com](mailto:rdharmaraju@gmail.com))
* Alexandre Chiavegatto Filho (University of Sao Paulo, Brazil, [alexdiasporto@usp.br](mailto:alexdiasporto@usp.br))

*Collaboration site:* <https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/tg/SitePages/TG-MCH.aspx>

## Neurological disorders (TG-Neuro)

*Topic description document* *(latest version*): [DEL10\_08](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame2.aspx?sourcedoc=%7B0EE90840-B8E6-4828-B7B1-ABA3F05CBAFB%7D&file=FGAI4H-K-016-A01.docx&action=default&CT=1620313652433&OR=DocLibClassicUI)

*CfP:* <https://www.itu.int/en/ITU-T/focusgroups/ai4h/Documents/tg/CfP-TG-Neuro.pdf>

*Topic driver:* Marc Lecoultre (ML Labs, Switzerland, [ml@mllab.ai](mailto:ml@mllab.ai))

*Collaboration site:* <https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/tg/SitePages/TG-Neuro.aspx>

## Ophthalmology (TG-Ophthalmo)

*Topic description document* *(latest version):* [DEL10\_09](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame2.aspx?sourcedoc=%7BB133F60C-AD2C-4655-8910-8BFD8480087D%7D&file=FGAI4H-K-017-A01.docx&action=default&CT=1620313719598&OR=DocLibClassicUI)

*CfP:* <https://www.itu.int/en/ITU-T/focusgroups/ai4h/Documents/tg/CfP-TG-Ophthalmo.pdf>

*Topic driver:* Arun Shroff (MedIndia, India/USA, [arunshroff@gmail.com](mailto:arunshroff@gmail.com))

*Collab. site:* <https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/tg/SitePages/TG-Ophthalmo.aspx>

## Outbreak detection (TG-Outbreaks)

*Topic description document (latest version):* [DEL10\_10](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame2.aspx?sourcedoc=%7B9B5EE32B-E19D-4457-9498-3947FFDF9EFB%7D&file=FGAI4H-K-018-A01.docx&action=default&CT=1620313765786&OR=DocLibClassicUI)

*CfP:* <https://www.itu.int/en/ITU-T/focusgroups/ai4h/Documents/tg/CfP-TG-Outbreaks.pdf>

*Topic driver:*

* Stéphane Ghozzi (Helmholtz Centre for Infection Research (HZI), Germany,  [stephane.ghozzi@helmholtz-hzi.de](mailto:stephane.ghozzi@helmholtz-hzi.de))
* Auss Abbood (Robert Koch Institute (RKI), Germany, [AbboodA@rki.de](mailto:AbboodA@rki.de))

*Collab. site:* <https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/tg/SitePages/TG-Outbreaks.aspx>

## Psychiatry (TG-Psy)

*Topic description document* (latest version): [DEL10\_11](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame.aspx?sourcedoc=%7BB2ED6EDE-1369-4792-9053-10B60870EEB1%7D&file=FGAI4H-K-019-A01.docx&action=default&CT=1620381689649&OR=DocLibClassicUI)

*CfP:* <https://www.itu.int/en/ITU-T/focusgroups/ai4h/Documents/tg/CfP-TG-Psy.pdf>

*Topic driver:* Nicolas Langer (ETH Zurich, Switzerland, [n.langer@psychologie.uzh.ch](mailto:n.langer@psychologie.uzh.ch))

*Collaboration site:* <https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/tg/SitePages/TG-Psy.aspx>

## Radiology (TG-Radiology)

*Topic description document (latest version):* [DEL\_10\_12](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame2.aspx?sourcedoc=%7B5A70AC3C-A5F0-4753-B951-0FE3FD293BDC%7D&file=FGAI4H-K-023-A01.docx&action=default&CT=1620381771440&OR=DocLibClassicUI)

*CfP:* <https://www.itu.int/en/ITU-T/focusgroups/ai4h/Documents/tg/CfP-TG-Radiology.pdf>

*Topic driver:* Darlington Ahiale Akogo (minoHealth AI Labs, Ghana, [darlington@gudra-studio.com](mailto:darlington@gudra-studio.com))

*Collab. site:* <https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/tg/SitePages/TG-Radiology.aspx>

## Snakebite and snake identification (TG-Snake)

*Topic description document* *(latest version)*: [DEL10\_13](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame.aspx?sourcedoc=%7B80AAFCDC-8894-4030-AB4F-836652AE36D9%7D&file=FGAI4H-K-020-A01.docx&action=default&CT=1620381824183&OR=DocLibClassicUI)

*CfP:* <https://www.itu.int/en/ITU-T/focusgroups/ai4h/Documents/tg/CfP-TG-Snake.pdf>

*Topic driver:* Rafael Ruiz de Castaneda (Université de Genève, Switzerland, [Rafael.RuizDeCastaneda@unige.ch](mailto:Rafael.RuizDeCastaneda@unige.ch))

*Collaboration site:* <https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/tg/SitePages/TG-Snake.aspx>

## Symptom assessment (TG-Symptom)

*Topic description document* *(latest version):* [DEL10\_14](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame.aspx?sourcedoc=%7B50C51BD7-2067-40D3-B369-432AAA8BB38C%7D&file=FGAI4H-K-021-A01.docx&action=default&CT=1620381859125&OR=DocLibClassicUI)

*CfP:* <https://www.itu.int/en/ITU-T/focusgroups/ai4h/Documents/tg/CfP-TG-Symptom.pdf>

*Topic driver:* Henry Hoffmann (Ada Health, Germany, [henry.hoffmann@ada.com](mailto:henry.hoffmann@ada.com)) ​

*Collab. site:* <https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/tg/SitePages/TG-Symptom.aspx>

## Tuberculosis (TG-TB)

*Topic description document (latest version):* [DEL10\_15](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame.aspx?sourcedoc=%7B25AF99D8-6CDD-4378-910F-508822338628%7D&file=FGAI4H-K-022-A01.docx&action=default&CT=1620381922812&OR=DocLibClassicUI)

*CfP:* <https://www.itu.int/en/ITU-T/focusgroups/ai4h/Documents/tg/CfP-TG-TB.pdf>

*Topic driver:* Manjula Singh (ICMR, India, [singhmanjula.hq@icmr.gov.in](mailto:singhmanjula.hq@icmr.gov.in))

*Collaboration site:* <https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/tg/SitePages/TG-TB.aspx>

## Volumetric chest computed tomography (TG-DiagnosticCT)

*Topic description document* *(latest version):* [DEL10\_16](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame.aspx?sourcedoc=%7BA574FC32-6D7C-479D-9D1D-D109B4B19346%7D&file=FGAI4H-K-009-A01.docx&action=default&CT=1620381968100&OR=DocLibClassicUI)

*CfP:* <https://www.itu.int/en/ITU-T/focusgroups/ai4h/Documents/tg/CfP-TG-DiagnosticCT.pdf>

*Topic driver:* Kuan Chen (Infervision, China, [ckuan@infervision.com](mailto:ckuan@infervision.com))

*Collab. site:* <https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/tg/SitePages/TG-DiagnosticCT.aspx>

## Dental diagnostics and digital dentistry (TG-Dental)

*Topic description document* *(latest version):* [DEL10\_17](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame.aspx?sourcedoc=%7B58BA461E-69C0-4C17-B180-6B836F27194E%7D&file=FGAI4H-K-010-A01.docx&action=default&CT=1620382008049&OR=DocLibClassicUI)

*CfP:* <https://www.itu.int/en/ITU-T/focusgroups/ai4h/Documents/tg/CfP-TG-Dental.pdf>

*Topic drivers:*

* Falk Schwendicke (Charité Berlin, Germany, [falk.schwendicke@charite.de](mailto:falk.schwendicke@charite.de))
* Joachim Krois (Charité Berlin, Germany, [joachim.krois@charite.de](mailto:joachim.krois@charite.de))

*Collaboration site:* <https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/tg/SitePages/TG-Dental.aspx>

## AI-based detection of falsified medicine (TG-FakeMed)

*Topic description document*: [DEL10\_18](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame2.aspx?sourcedoc=%7BEB5A6485-3705-4337-B84B-D56EF269820C%7D&file=FGAI4H-K-011-A01.docx&action=default&CT=1620382055275&OR=DocLibClassicUI)

*CfP:* <https://www.itu.int/en/ITU-T/focusgroups/ai4h/Documents/tg/CFP-TG-FakeMed.pdf>

*Topic driver:* Franck Verzefé (TrueSpec-Africa, DRC, [fverzefe@gmail.com](mailto:fverzefe@gmail.com))

*Collab. site:* <https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/tg/SitePages/TG-FakeMed.aspx>

## Primary and secondary Diabetes risk prediction (TG-Diabetes)

*Topic description document (latest version):* [DEL10\_19](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame2.aspx?sourcedoc=%7B51C0685C-D12D-4D52-A140-7D8B1634E1E3%7D&file=FGAI4H-K-024-A01.docx&action=default&CT=1620382133330&OR=DocLibClassicUI)

*CfP:* <https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame.aspx?sourcedoc=%7B546BB29A-191A-435D-A225-4C2878B11577%7D&file=FGAI4H-J-024.docx&action=default>

*Topic driver:* Andrés Valdivieso (Anastasia.ai, Chile)

*Collab. site:* <https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/tg/SitePages/TG-Diabetes.aspx>

## AI and endoscopy (TG-Endoscopy)

*Topic description document*: [DEL10\_20](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame2.aspx?sourcedoc=%7BF2EDF390-01B1-4EF7-86B1-0104BD553C57%7D&file=FGAI4H-K-025-A01.docx&action=default&CT=1620382172769&OR=DocLibClassicUI)

*CfP:* <https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame.aspx?sourcedoc=%7B871510A1-2865-4F33-9B8F-B57DE7828334%7D&file=FGAI4H-J-025-A02.docx&action=default>

*Topic driver:* Jianrong Wu (Tencent Healthcare, China)

*Collab. site:* <https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/tg/SitePages/TG-Endoscopy.aspx>

## Musculoskeletal Medicine (TG-MSK)

*Topic description document*: [DEL10\_21](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/_layouts/15/WopiFrame2.aspx?sourcedoc=%7BC6CB2249-662C-4523-BC25-45E08C86CA8C%7D&file=FGAI4H-K-026-A01.docx&action=default&CT=1620382235231&OR=DocLibClassicUI)

*CfP:* <https://www.itu.int/en/ITU-T/focusgroups/ai4h/Documents/tg/CfP-TG-MSK.pdf>

*Topic drivers* ([tgmskorg@googlegroups.com](mailto:tgmskorg@googlegroups.com))*:*

* Peter Grinbergs (EQL, UK)
* Yura Perov (Individual Contributor, UK)
* Kate Ryan (EQL, UK)

*Collab. site:* <https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/tg/SitePages/TG-MSK.aspx>

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_