FGAI4H-M-032-R01-A01

E-meeting, 28-30 September 2021

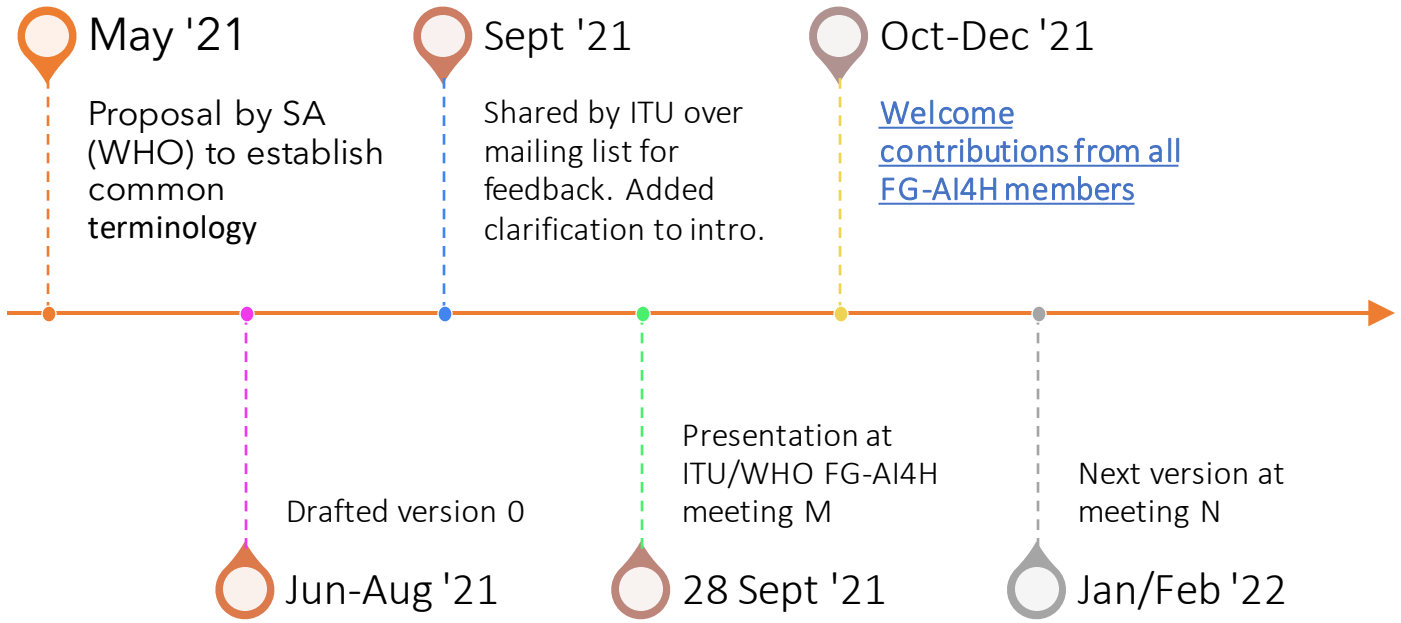
Source:	Editors	
Title:	Proposed new deliverable: FG-AI4H terms and definitions - Att.1 - Presentation	
Purpose:	Discussion	
Contact:	Markus Wenzel	E-mail: markus.wenzel@hhi.fraunhofer.de
Abstract:	This PPT summarizes the content of FGAI4H-M-032-R01 with the proposed new deliverable: FG-AI4H terms and definitions, for presentation and discussion during the meeting.	

Establish glossary with agreed AI for health terminology

- Motivation & objectives:
  - Promote consistent term use across ITU/WHO FG-AI4H deliverables
  - Harmonized use of important AI for health terms across the different disciplines involved in this cross-disciplinary field
- Glossary: collection of unified
  - terms + definitions from renowned sources (journals, standards etc.)
  - terms + our definitions

AI for Health
ITU-WHO Focus Group

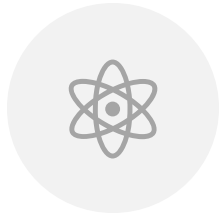
Timeline of glossary development



Terms & definitions grouped in 7 categories

TECHNICAL

STATISTICAL



CLINICAL & SCIENTIFIC

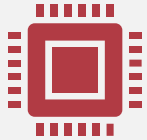
EVALUATION

ETHICS

PRODUCT

POLICY

x.1) Terms defined elsewhere



2.1.15 **Semi-supervised Machine Learning** [ISO/IEC 22989]: Machine learning that makes use of both labelled and unlabelled data during training.

5.1.9 **Clinical Validation** [IMDRF/SaMD-N41]: The ability of a SaMD to yield a clinically meaningful output associated to the target use of SaMD output in with the target health care situation or condition identified in the SaMD definition statement

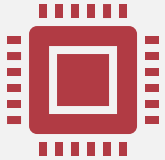
6.1.15 **Data triangulation** [WHO AI-EG]: Techniques that can be used to reconstruct a de-identified, incomplete dataset by a third party for re-identification of an individual.

Corresponding bibliographical references

- **[ISO/IEC 22989]** ISO/IEC 22989 (2021), Information technology —Artificial intelligence —Artificial intelligence concepts and terminology. https://www.iso.org/standard/74296.html
- **[IMDRF/SaMD-N41]** IMDRF SaMD WG/N41FINAL:2017, SaMD: Clinical Evaluation (N41). http://www.imdrf.org/docs/imdrf/final/technical/imdrf-tech-170921-samd-n41-clinical-evaluation_1.pdf
- **[WHO AI-EG]** World Health Organization Global (28 June 2021), WHO Guidance - Ethics and governance of artificial intelligence for health. https://www.who.int/publications/i/item/9789240029200

x.2) Terms defined here

2.2.1 Test dataset: A subset of the data that is never shown to the model during training, used to verify that the model has learned what it was supposed to.



NOTE –Adapted from [ISO/IEC 22989], which defines "test data: data used to assess the performance of a final machine learning model. [...] Test data is disjoint from training data and validation data. [...]. The test set is used to verify that the model has learned what it was supposed to."

Initial term collection as seed

- **Technical terms**: algorithm, application, artificial intelligence, batch learning, bias, class-activation map, continuous learning, convolutional neural networks, deep learning, fine-tuning, locked algorithm, machine learning, neural networks, reliability, semi-supervised machine learning, supervised machine learning, training, training dataset, unsupervised machine learning, training, training dataset, unsupervised machine learning, test dataset
- **Statistical terms**: area under the receiver operating characteristic curve
- **Evaluation terms**: clinical data, clinical evaluation, clinical evidence, clinical investigation, clinical outcome, clinical outcome assessment, clinical performance, clinical trials, clinical validation, development environment, effectiveness, input data, intended use, output data, performance error, post-market clinical follow-up study, post-market surveillance, safety, scientific validity (valid clinical association), verification, validation
- **Ethics terms**: anonymization, automation bias, autonomy, beneficence, bias, bio-surveillance, black-box algorithm, confidentiality, control problem, co-regulation, data altruism, data colonialism, data portability, data protection laws, data triangulation, de-identification, digital divide, digital welfare state, ethics, explainability, fairness, federated data, human rights, human warranty, impact assessment, inclusiveness, informed consent, many hands problem, non-maleficence, peer disagreement, privacy, pseudo-anonymization, responsibility, responsiveness, sustainability, transparency
- **Product terms**: software as a medical device, total product life cycle
- **Policy terms**: high income countries, low-and lower-middle income countries, focus group, sustainable development goals

Joint work: contributors

- Pat Baird (Philips), Shada Alsalamah, Stephanie Kuku, Rohit Malpani, Andreas Reis (WHO), Simão Campos (ITU)
- You are welcome to join our team and contribute by sending me:
  - Term
  - Definition
  - Source/bibliographic ref. (from renowned journal, standardization body etc.)

- You will be mentioned under contributors in this DEL11 of ITU/WHO FGAI-4H

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