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| ITU Logo | INTERNATIONAL TELECOMMUNICATION UNION**TELECOMMUNICATIONSTANDARDIZATION SECTOR**STUDY PERIOD 2017-2020 | FG-AI4H-F-019 |
| **ITU-T Focus Group on AI for Health** |
| **Original: English** |
| **WG(s):** | Plenary | Zanzibar, 3-5 September 2019 |
| **DOCUMENT(Ref:** [ISO/IEC JTC1/SC42-20190531](http://ifa.itu.int/t/2017/ls/isoiecjtc1sc42/sp16-iso_iecjtc1_sc42-iLS-00003r1.zip)**)** |
| **Source:** | ISO/IEC JTC1 SC42 WG4 |
| **Title:** | LS on request for relevant AI Use Cases [from JTC 1/SC 42] |
| **Purpose:** | Discussion |
| **LIAISON STATEMENT** |
| **For action to:** | ISO/TC 37; ISO/TC 69; ISO/TC 215; ISO/TC 299; ISO/TC 307/WG 3; ISO/IEC JTC1/SC 29/WG 11; ISO/IEC JTC1/SC 32; ISO/IEC JTC1/SC 38; ISO/IEC JTC1/SC 36; ISO/IEC JTC1/SC41; BDVA-Big Data Value Association; ITU-T FG-ML5G; ITU-T FG NET-2030; ITU-T FG-AI4H; IEEE |
| **For comment to:** | **‑** |
| **For information to:** | **‑** |
| **Approval:** | By correspondence (Geneva, 31 May 2019) |
| **Deadline:** | 31 August 2019 |
| **Contact:** | Secretariat, ISO/IEC JTC 1/SC 42, American National Standards Institute, 25 West 43rd Street, New York, NY 10036;  | Tel: +1 212 642 4912Fax: +1 212 840 2298Email: hbenko@ansi.org |

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| **Abstract:** | JTC 1/SC42 "Artificial Intelligence" WG4 seeks information on AI use cases for inclusion in a technical report they are preparing. A template for feedback is provided, as well as the current draft of their report. |

JTC 1/SC 42 "*Artificial Intelligence*" is developing a Technical Report collecting use cases relative to Artificial Intelligence. With this liaison statement, we request that your organization provide us with your relevant AI use cases, using the attached Word template (attached, from SC 42 N 315), by 31 August 2019 for consideration by the committee.

For your information, please find attached the first WD of ISO/IEC TR 24030, which includes a number of use cases.

Please submit any relevant Use Cases to the JTC 1/SC 42 Committee manager (hbenko@ansi.org) by date identified above (31 August 2019).

Thank you for your assistance.

[**Annex A**](#AnnexA)**:** ISO/IEC JTC1 SC42 WG4 Use Case Submission Form

Electronic attachment:

* Draft ISO/IEC TR 24030, Information technology – Artificial Intelligence (AI) – Use cases. [https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/docs/FGAI4H-F-019-A1.pdf](https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/docs/FGAI4H-F-019-A01.pdf)

# ANNEX AISO/IEC JTC 1 SC 42 Artificial Intelligence – Working Group 4Use Case Submission Form

# The quality of use case submissions will be evaluated for inclusion in the Working Group’s Technical Report based the application area, relevant AI technologies, credible reference sources (see References section), and the following characteristics:

* Data Focus & Learning: Use cases for AI system which utilizes Machine Learning, and those that use a fixed *a priori* knowledge base.
* Level of Autonomy: Use cases demonstrating several degrees (dependent, autonomous, human/critic in the loop, etc.) of AI system autonomy.
* Verifiability & Transparency: Use cases demonstrating several types and levels of verifiability and transparency, including approaches for explainable AI, accountability, etc.
* Impact: Use cases demonstrating the impact of AI systems to society, environment, etc.
* Architecture: Use cases demonstrating several architectural paradigms for AI systems (e.g., cloud, distributed AI, crowdsourcing, swarm intelligence, etc.)
1. **General**

|  |  |
| --- | --- |
| ID | (leave blank, for internal use) |
| Use case name |  |
| Application domain | (Select from pull-down menu) |
| Deployment model | (Select from pull-down menu) |
| Status | (Select from pull-down menu) |
| Scope[[1]](#footnote-1) |  |
| Objective(s)[[2]](#footnote-2) |  |
| Narrative | Short description(not more than 150 words) |  |
| Completedescription |  |
| Stakeholders[[3]](#footnote-3) |  |
| Stakeholders’ assets, values[[4]](#footnote-4) |  |
| System’s threats & vulnerabilities[[5]](#footnote-5) |  |
| Key performance indicators (KPIs) | ID | Name | Description | Reference to mentioned use case objectives |
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| AI features | Task(s) | (Select from pull-down menu) |
| Method(s)[[6]](#footnote-6) |  |
| Hardware[[7]](#footnote-7) |  |
| Topology[[8]](#footnote-8) |  |
| Terms and concepts used[[9]](#footnote-9) |  |
| Standardization opportunities/ requirements |  |
| Challenges and issues |  |
| Societal Concerns[[10]](#footnote-10) | Description |  |
| SDGs[[11]](#footnote-11) to be achieved | (Select from pull-down menu) |

**Data (optional)**

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| Data characteristics |
| Description |  |
| Source[[12]](#footnote-12) |  |
| Type[[13]](#footnote-13) |  |
| Volume (size) |  |
| Velocity[[14]](#footnote-14) |  |
| Variety[[15]](#footnote-15) |  |
| Variability (rate of change)[[16]](#footnote-16) |  |
| Quality[[17]](#footnote-17) |  |

**Process scenario (optional)**

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| Scenario conditions |
| No. | Scenario name | Scenario description | Triggering event | Pre-condition[[18]](#footnote-18) | Post-condition[[19]](#footnote-19) |
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**Training (optional)**

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| Scenario name | Training |
| Step No. | Event[[20]](#footnote-20) | Name of process/Activity[[21]](#footnote-21) | Primary actor | Description of process/activity | Requirement |
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| Specification of training data |  |

 **Evaluation (optional)**

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| Scenario name | Evaluation |
| Step No. | Event[[22]](#footnote-22) | Name of process/Activity[[23]](#footnote-23) | Primary actor | Description of process/activity | Requirement |
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| Input of evaluation |  |
| Output of evaluation |  |

**Execution (optional)**

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| Scenario name | Execution |
| Step No. | Event[[24]](#footnote-24) | Name of process/Activity[[25]](#footnote-25) | Primary actor | Description of process/activity | Requirement |
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| Input of Execution |  |
| Output of Execution |  |

**Retraining (optional)**

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| Scenario name | Retraining |
| Step No. | Event[[26]](#footnote-26) | Name of process/Activity[[27]](#footnote-27) | Primary actor | Description of process/activity | Requirement |
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| Specification of retraining data |  |

**References**

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| References |
| No. | Type | Reference | Status | Impact on use case | Originator/organization | Link |
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# Acceptable Reference Sources of Use Cases

* Peer-reviewed scientific/technical publications on AI applications (e.g. [1]).
* Patent documents describing AI solutions (e.g. [2], [3]).
* Technical reports or presentations by renowned AI experts (e.g. [4])
* High quality company whitepapers and presentations
* Publicly accessible sources with sufficient detail

***This list is not exhaustive. Other credible sources may be acceptable as well.***

## Examples of credible sources:

* [1] B. Du Boulay. "Artificial Intelligence as an Effective Classroom Assistant". IEEE Intelligent Systems, V 31, p.76–81. 2016.
* [2] S. Hong. "Artificial intelligence audio apparatus and operation method thereof". N US 9,948,764, Available at: [https://patents.google.com/patent/US20150120618A1/en. 2018](https://patents.google.com/patent/US20150120618A1/en.%202018).
* [3] M.R. Sumner, B.J. Newendorp and R.M. Orr. "Structured dictation using intelligent automated assistants". N US 9,865,280, 2018.
* [4] J. Hendler, S. Ellis, K. McGuire, N. Negedley, A. Weinstock, M. Klawonn and D. Burns. "WATSON@RPI, Technical Project Review".

 URL: [https://www.slideshare.net/jahendler/watson-summer-review82013final. 2013](https://www.slideshare.net/jahendler/watson-summer-review82013final.%202013).

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1. The scope defines the intended area of applicability, limits, and audience. [↑](#footnote-ref-1)
2. The intention of the system; what is to be accomplished?; who/what will benefit?. [↑](#footnote-ref-2)
3. Stakeholder are those that can affect or be affected by the AI system in the scenario; e.g., organizations, customers, 3rd parties, end users, community, environment, negative influencers, bad actors, etc. [↑](#footnote-ref-3)
4. Stakeholders’ assets and values that are at stake with potential risk of being compromised by the AI system deployment – e.g., competitiveness, reputation, trustworthiness, fair treatment, safety, privacy, stability, etc. [↑](#footnote-ref-4)
5. Threats and vulnerabilities can compromise the assets and values above - e.g., different sources of bias, incorrect AI system use, new security threats, challenges to accountability, new privacy threats (hidden patterns), etc. [↑](#footnote-ref-5)
6. AI method(s)/framework(s) used in development. [↑](#footnote-ref-6)
7. Hardware system used in development and deployment. [↑](#footnote-ref-7)
8. Topology of the deployment network architecture. [↑](#footnote-ref-8)
9. Terms and concepts used here should be consistent with those defined by Working Group 1 (AWI 22989 and AWI 23053) or to be recommended for inclusion. [↑](#footnote-ref-9)
10. To be inserted. [↑](#footnote-ref-10)
11. The Sustainable Development Goals (SDGs), also known as the Global Goals, are a collection of 17 global goals set by the United Nations General Assembly. SDGs are a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity.

 URL: <http://www.undp.org/content/undp/en/home/sustainable-development-goals.html> [↑](#footnote-ref-11)
12. Origin of data, which could be from customers, instruments, IoT, web, surveys, commercial activity, simulations, etc. [↑](#footnote-ref-12)
13. Structured/unstructured text, images, voices, gene sequences, numbers, composite: time-series, graph-structures, etc. [↑](#footnote-ref-13)
14. The rate of flow at which the data is created, stored, analysed, or visualized. Could be in real time. [↑](#footnote-ref-14)
15. Domains and types of data employed including formats, logical models, timescales, and semantics. Could be from multiple databases. [↑](#footnote-ref-15)
16. Changes in data rate, format/structure, semantics, and/or quality. [↑](#footnote-ref-16)
17. Completeness and accuracy of the data with respect to semantic content as well as syntax of the data (such as presence of missing fields or incorrect values). [↑](#footnote-ref-17)
18. Describes which condition(s) should have been met before this scenario happens. [↑](#footnote-ref-18)
19. Describes which condition(s) should prevail after this scenario happens. The post-condition may also define "success" or "failure" conditions [↑](#footnote-ref-19)
20. The event that triggers the step. This might be completion of the previous event. [↑](#footnote-ref-20)
21. Action verbs should be used when naming activity. [↑](#footnote-ref-21)
22. The event that triggers the step. This might be completion of the previous event. [↑](#footnote-ref-22)
23. Action verbs should be used when naming activity. [↑](#footnote-ref-23)
24. The event that triggers the step. This might be completion of the previous event. [↑](#footnote-ref-24)
25. Action verbs should be used when naming activity. [↑](#footnote-ref-25)
26. The event that triggers the step. This might be completion of the previous event. [↑](#footnote-ref-26)
27. Action verbs should be used when naming activity. [↑](#footnote-ref-27)