

Recommendation **ITU-T F.748.51 (03/2025)**

SERIES F: Non-telephone telecommunication services

Multimedia services

Requirements for artificial intelligence-based tactile rendering system in multimedia terminals

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Recommendation ITU-T F.748.51

Requirements for artificial intelligence-based tactile rendering system in multimedia terminals

Summary

Recommendation ITU-T F.748.51 describes the architecture of an artificial intelligence-based tactile rendering system (TRS) for multimedia terminals. It defines a layered system architecture, consisting of the device layer, service layer and application layer. This Recommendation also specifies key requirements related to data management, algorithm design, system stability, and implementation methods. The Recommendation provides guidance for AI-based tactile rendering system in multimedia terminals to facilitate the research and development aimed at creating intelligent, user-centric systems that enhance operational comfort, immersive interaction, and technological innovation.

History*

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Artificial intelligence (AI), framework, multimedia terminal, requirements, tactile rendering system (TRS).

* To access the Recommendation, type the URL <https://handle.itu.int/> in the address field of your web browser, followed by the Recommendation's unique ID.

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The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

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Requirements for artificial intelligence-based tactile rendering system in multimedia terminals

1 Scope

This Recommendation describes the requirements and framework of AI-based tactile rendering systems for multimedia terminals. It addresses the following subjects:

The scope of the new work item is proposed to include these aspects:

- Overview of AI-based tactile rendering systems for multimedia terminals;
- Framework and general process of AI-based tactile rendering systems for multimedia terminals;
- Requirements for AI-based tactile rendering systems in multimedia terminals.

2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

None.

3 Definitions

3.1 Terms defined elsewhere

This Recommendation uses the following terms defined elsewhere:

3.1.1 artificial intelligence [b-ITU-T F.749.13]: An interdisciplinary field, usually regarded as a branch of computer science, dealing with models and systems for the performance of functions generally associated with human intelligence, such as reasoning and learning.

3.1.2 algorithm [b-ITU-T F.740.7]: A set of rules for transforming the logical representation of data.

3.1.3 application [b-ITU-T Y.101]: A structured set of capabilities, which provide value-added functionality supported by one or more services.

3.1.4 machine learning [b-ITU-T Y.3172]: Processes that enable computational systems to understand data and gain knowledge from it without necessarily being explicitly programmed.

3.1.5 model [b-ITU-T F.748.16]: An output created by an algorithm running on training data that can generate an inference or prediction, based on input data.

3.1.6 tactile [b-ITU-T H.430.6]: Tactile appertains to touch.

3.1.7 virtual reality [b-ITU-T P.1320]: An environment that is fully generated by digital means. To qualify as virtual reality, the virtual environment should differ from the local environment.

3.1.8 service [b-ITU-T Y.101]: A structured set of capabilities intended to support applications.