

Recommendation **ITU-T F.748.28 (06/2024)**

SERIES F: Non-telephone telecommunication services

Multimedia services

Requirements and functional architecture of digital twin platforms for supporting multimedia services

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Recommendation ITU-T F.748.28

Requirements and functional architecture of digital twin platforms for supporting multimedia services

Summary

Multimedia services are becoming increasingly useful for education, video-based marketing, digital museum, e-health, etc., providing an enriched user experience in e-meetings, distance training and product demonstrations.

Digital twin realizes the interconnection, intercommunication and interoperability between the physical world and the digital world, constructs the description, diagnosis, prediction and decision-making of the physical world in the virtual world.

At present, the digital twin system in different multimedia services has common requirements and functions, and it is necessary to develop a digital twin platform to realize the services for upper multimedia applications. The digital twin platform provides general services, twin services, interactive services for multimedia applications such as the fields of education, video-based marketing, digital museum, E-health, etc.

Recommendation ITU-T F.748.28 specifies the requirements and functional architecture of the digital twin platform for supporting multimedia services.

History *

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FOREWORD

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The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

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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Recommendation ITU-T F.748.28

Requirements and functional architecture of digital twin platforms for supporting multimedia services

1 Scope

This Recommendation specifies the requirements and framework of digital twin platform for supporting multimedia services.

The scope of this Recommendation includes:

- Overview of digital twin platform for supporting multimedia services;
- Requirements for digital twin platform;
- Functional architecture of digital twin platform.

NOTE – Use cases of the digital twin platform for supporting multimedia services are provided in Appendix I.

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.

[ITU-T F.700] Recommendation ITU-T F.700 (2000), *Framework Recommendation for multimedia services*.

3 Definitions

3.1 Terms defined elsewhere

This Recommendation uses the following term defined elsewhere:

3.1.1 digital twin [b-ITU-T Y.4600]: A digital representation of an object of interest.

NOTE – A digital twin may require different capabilities (e.g., synchronization, real-time support) according to the specific domain of application.

3.2 Terms defined in this Recommendation

None.

4 Abbreviations and acronyms

This Recommendation uses the following abbreviations and acronyms:

2D	2-Dimension
3D	3-Dimension
AI	Artificial Intelligence
API	Application Programming Interface
CPUs	Central Processing Units