

Recommendation **ITU-T F.743.29 (03/2025)**

SERIES F: Non-telephone telecommunication services

Multimedia services

Requirements and framework of model generalization system in intelligent video surveillance

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Recommendation ITU-T F.743.29

Requirements and framework of model generalization system in intelligent video surveillance

Summary

Recommendation ITU-T F.743.29 addresses the issue of industry research and development progressing without a unified standard framework. This Recommendation provides an overview of the model generalization system in intelligent video surveillance and specifies the requirements and framework for model generalization system.

With the accelerating integration of artificial intelligence (AI) and the real economy, video analysis capabilities based on AI algorithms have become a critical requirement for many vertical applications in video surveillance.

With the popularity of artificial intelligence research, AI algorithms have been implemented in intelligent video surveillance (IVS) system. However, these AI models face several challenges when implemented in IVS systems:

- 1) the generalization ability of AI models is weak, and their algorithm performance is poor across different video surveillance scenarios;
- 2) Data quality is crucial for the training and implementation of small AI models.

There is a lack of high-quality labelled data in the IVS system.

To better promote the application of IVS, ensure the application effect, and promote the research of IVS technology, many companies have launched IVS systems with high functional integration based on large-scale, pre-trained, generalized artificial intelligence models to meet the diverse needs of the IVS. This has led to a highly complex, heterogeneous, and fragile ecosystem.

History *

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Keywords

Fine-tune, intelligent video surveillance, model generalization system, model inference, pre-training.

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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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