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| The International Teleocmmunication Union - Connecting the World. | | **International telecommunication union**  **Telecommunication Standardization Bureau** | |  |
|  | | | Geneva, 27 September 2024 | |
| **Ref:** | **TSB Circular 236**  **SG20/CB** | | **To:**  - Administrations of Member States of the Union;  **Copy to:**  - ITU-T Sector Members;  - Associates of ITU-T Study Group 20;  - ITU Academia;  - The Chair and Vice-Chairs of ITU-T Study Group 20;  - The Director of the Telecommunication Development Bureau;  - The Director of the Radiocommunication Bureau | |
| **Tel:** | +41 22 730 6301 | |
| **Fax:**  **E-mail:** | +41 22 730 5853  [tsbsg20@itu.int](mailto:tsbsg20@itu.int) | |
| **Subject:** | **Member State consultation on Determined draft new Recommendations ITU-T Y.4506 (ex Y.DRI-arch), Y.4229 (ex Y.IoT-SFFS), Y.4230 (ex Y.EV-charging), Y.4231 (ex Y.IoT-Vreqs), Y.4232 (ex Y.IoT-RTPS), Y.4233 (ex Y.FSPH), Y.4234 (ex Y.RemoteEd), Y.4222 (ex Y.smart-evacuation), Y.4507 (ex Y.arc-psfws), Y.4508 (ex Y.DPM-alm-fra), Y.4706 (ex Y.dem-IoT) and Y.4499 (ex Y.UIM-cs-framework) proposed for approval at the meeting of ITU-T Study Group 20 (Geneva, 15-24 January 2025)** | | | |

Dear Sir/Madam,

1 ITU-T Study Group 20 (SG20: Internet of things (IoT) and smart cities and communities (SC&C)) intends to apply the Traditional Approval Procedure as described in Section 9 of WTSA Resolution 1 (Rev. Geneva, 2022) for the approval of the above-mentioned draft Recommendations at its next meeting in Geneva, Switzerland, from 15 to 24 January 2025. The agenda and all relevant information concerning the ITU‑T Study Group 20 meeting will be available in [Collective letter 5/20](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=T22-SG20-COL-0005).

2 The titles, summaries and locations of the draft new Recommendations ITU-T Y.4506 (ex Y.DRI-arch), Y.4229 (ex Y.IoT-SFFS), Y.4230 (ex Y.EV-charging), Y.4231 (ex Y.IoT-Vreqs), Y.4232 (ex Y.IoT-RTPS), Y.4233 (ex Y.FSPH), Y.4234 (ex Y.RemoteEd), Y.4222 (ex Y.smart-evacuation), Y.4507 (ex Y.arc-psfws), Y.4508 (ex Y.DPM-alm-fra), Y.4706 (ex Y.dem-IoT) and Y.4499 (ex Y.UIM-cs-framework), proposed for approval can be found in Annex 1.

3 This Circular initiates the formal consultation with ITU Member States on whether these texts may be considered for approval at the upcoming meeting, in accordance with clause 9.4 of Resolution 1. Member States are kindly requested to complete and return the form in Annex 2 by 2359 hours UTC on **3 January 2025**.

4 If 70% or more of the replies from Member States support consideration for approval, one Plenary session will be devoted to apply the approval procedure. Member States that do not assign authority to proceed should inform the Director of TSB of the reasons for this opinion and indicate the possible changes that would enable the work to progress.

TSB NOTE 1– As of the date of this Circular, no IPR statements had been received by TSB regarding any of these draft texts. For up-to-date information, members are invited to consult the IPR database at [www.itu.int/ipr/](http://www.itu.int/ipr/).

Yours faithfully

Seizo Onoe  
Director of the Telecommunication  
Standardization Bureau

**Annexes:** 2

**Annex 1**

**Summary and location of Determined draft new Recommendations ITU-T Y.4506 (ex Y.DRI-arch), Y.4229 (ex Y.IoT-SFFS), Y.4230 (ex Y.EV-charging), Y.4231 (ex Y.IoT-Vreqs), Y.4232 (ex Y.IoT-RTPS), Y.4233 (ex Y.FSPH), Y.4234 (ex Y.RemoteEd), Y.4222 (ex Y.smart-evacuation), Y.4507 (ex Y.arc-psfws), Y.4508 (ex Y.DPM-alm-fra), Y.4706 (ex Y.dem-IoT) and Y.4499 (ex Y.UIM-cs-framework)**

**1 Draft new Recommendation ITU-T Y.4506 (ex Y.DRI-arch): [**[**R21**](https://www.itu.int/md/T22-SG20-R-0021/en)**]**

**Reference architecture for the interworking of autonomous urban delivery robots**

**Summary**

This Recommendation defines the reference architecture for autonomous delivery robots based on Recommendation ITU-T Y.4607 that interwork with delivery robot service provider, user devices, and urban infrastructure to facilitate the delivery of goods without human intervention.

**2 Draft new Recommendation ITU-T Y.4229 (ex Y.IoT-SFFS): [**[**R22**](https://www.itu.int/md/T22-SG20-R-0022/en)**]**

**Requirements and reference functional model for an Internet of things-based smart forest firefighting system**

**Summary**

Recommendation Y.4229 introduces a smart forest firefighting system based on the Internet of things (IoT), for which it specifies a reference functional model and requirements. Recommendation Y.4229 is intended to guide the design, development and implementation of the IoT-based smart forest firefighting system.

The frequent occurrence of forest fires has become a world-class problem. Although many countries have invested a lot of money in numerous countermeasures, several challenges remain to be overcome. These challenges include the vastness of forest areas that cannot be fully monitored, and the incomplete network coverage of forests preventing efficient information transmission. Additionally, the performance of typical IoT devices often fails to meet the actual requirements of forest applications. There is also a lack of early warning systems for impending forest fires, which delays fire-extinguishing and rescue operations when fires occur, as well as a lack of adequate assessment and inspection of post-fire capabilities.

With the development of IoT and artificial intelligence, forest-firefighting systems have become smarter. Smart forest firefighting systems are deployed in forest areas to enable real-time monitoring and early warning before forest fires occur. They can predict, locate, evaluate and extinguish fire when an outbreak occurs, and provide inspection and damage assessment after a fire.

**3 Draft new Recommendation ITU-T Y.4230 (ex Y.EV-charging): [**[**R23**](https://www.itu.int/md/T22-SG20-R-0023/en)**]**

**Requirements and capability framework for a public smart charging service for electric vehicles**

**Summary**

With the rapid increase in public usage of electric vehicles (EVs) in the city, more and more EV users require public charging services. Therefore, a public smart charging service for EVs is a future development direction and it is an important part of a smart city. Compared with a traditional charging service, a public smart charging service has the advantage of a highly networked and digitized system, as well as being flexible and convenient with intelligent management of electric power. The public smart charging service will be implemented on smart city infrastructure and will be indispensable for smart cities in the future.

This Recommendation specifies the requirements and capability framework for a public smart charging service for EVs, to optimize the EV charging service process and improve the EV charging service experience of EV users.

**4 Draft new Recommendation ITU-T Y.4231 (ex Y.IoT-Vreqs): [**[**R24**](https://www.itu.int/md/T22-SG20-R-0024/en)**]**

**Requirements and capability framework of the Internet of things for vision**

**Summary**

This Recommendation provides requirements and capability framework of the Internet of things (IoT) for vision, a typical IoT for vision application workflow as well as some relevant IoT for vision use cases.

With the popularization and development of smart cities and numerous IoT based verticals, the connotation of the Internet of things (IoT) is expanding and is no longer limited to simple sensor data collection and discrimination.

The IoT for vision is one of the main development directions of the IoT which uses digital cameras and other types of sensors to perceive objects of interest (including human beings, vehicles, animals, etc.) for diverse applications based on appropriate analysis.

**5 Draft new Recommendation ITU-T Y.4232 (ex Y.IoT-RTPS): [**[**R25**](https://www.itu.int/md/T22-SG20-R-0025/en)**]**

**Requirements, capabilities and use cases of Internet of things infrastructures in roadside traffic perception system**

**Summary**

The roadside traffic perception system (RTPS), is a system composed of Internet of things (IoT) infrastructures, including sensing devices, cloud facilities, intelligent traffic lights and smart traffic signs. By utilizing IoT technologies, the roadside traffic perception system can enhance traffic safety and efficiency with the capabilities of its components.

To enhance traffic safety and efficiency, IoT infrastructures in RTPS need to collaborate with each other using IoT technologies. Recommendation ITU-T Y.4232 therefore presents common and specific requirements and capabilities for IoT infrastructures. Use cases of RTPS are also given in the appendix.

**6 Draft new Recommendation ITU-T Y.4233 (ex Y.FSPH): [**[**R26**](https://www.itu.int/md/T22-SG20-R-0026/en)**]**

**Framework for smart public health emergency management in smart and sustainable cities**

**Summary**

This Recommendation specifies the framework of smart public health management in smart and sustainable cities (SSCs).

SSCs are capable of fostering data-driven smart applications to manage limited resources and implement them to thwart the advent of future pandemics of a similar magnitude to the COVID-19 pandemic. Linking SSCs with public health frameworks to manage future pandemics and epidemics and to the attainment of the SDGs (SDG 3: Global Health, SDG 1: Poverty Eradication and SDG 11: Make cities inclusive, safe, resilient, and sustainable), and to the Sendai Framework for Disaster Risk Reduction is a challenge and serves a dual purpose. With the utilization of appropriate emergency communication and public health frameworks, it will become easier to develop models to predict the spread of diseases, ascertain the source of illnesses, coordinate lockdowns, detect and report symptoms, identify viral strains and provide remote assistance as required with limited human interaction, through an infrastructure based on the Internet of Things.

This Recommendation is based on the U4SSC report entitled “Smart public health emergency management and ICT implementations” (see [b-U4SSC-2] in the bibliography) and its structure is as follows: it starts with an analysis of the public health context and of corresponding frameworks and returns a generic public health framework, which specifies a pandemic's lifecycle. This generic framework is then interconnected with the SSC and with city resilience. Further, it depicts with unified modelling language (UML) diagrams how this framework can be executed within the SSC environment and highlights the SSC components that play role in this execution.

**7 Draft new Recommendation ITU-T Y.4234 (ex Y.RemoteEd): [**[**R27**](https://www.itu.int/md/T22-SG20-R-0027/en)**]**

**Requirements, capabilities and deployment models for e-learning in remote classrooms**

**Summary**

This Recommendation includes a concept of e-learning in remote classrooms, i.e., places where information and communication technology (ICT) infrastructure and e-learning facilities, such as digital connectivity, computers, computer applications, virtual collaboration, online and digital educational catalogues, are made available for learners to educate themselves.

There is a wide and rising disparity in access to quality education between remote and rural areas of most countries when compared to its urban counterparts. Various international organizations (e.g., United Nations (UN), International Telecommunication Union (ITU), etc.) and national bodies (such as ministries) worldwide have acknowledged the need for urgent and concerted efforts towards the fulfilment of the promise for universalization of education.

It is also very clear that the future of education is digital and immersive, and that delivery of future education will be heavily dependent on access to appropriate (ICT) infrastructure and connectivity.

At the same time, there is a dire shortage of trained teaching staff, both in developed and developing countries, and the situation is much worse in the remote and underserved areas . In most such places, there are very few teachers, only some of which are capable of attending to the demands of fast evolving educational curriculums. In addition to education and learning, these remote areas are disadvantaged by a lack of access to other facilities, such as health and vocational capability development. New standards are required that bridge the digital divide and mitigate the growing disparity by ensuring that as more and more online services are delivered equitably to the remote and underserved areas.

This Recommendation describes the challenges and considerations for providing digital education to remote schools, and develops requirements, capabilities and deployment models to impart high quality e-learning services in remote classrooms in rural and remote areas.

**8 Draft new Recommendation ITU-T Y.4222 (ex Y.smart-evacuation): [**[**R28**](https://www.itu.int/md/T22-SG20-R-0028/en)**]**

**Framework of smart evacuation in a disaster or emergency in smart cities and communities**

**Summary**

Smart evacuation facilitates effective and efficient solutions for people inside a disaster or emergency zone and for people that need to enter such a zone as part of the response. Internet of things (IoT) and smart cities and communities could be used to provide smart evacuation during a disaster or an emergency.

This Recommendation describes concepts and features of smart evacuation control in disaster and emergency situations. It identifies high-level requirements and ICT infrastructure for smart evacuation along with use cases in disaster and emergency situations.

The introduction of a smart evacuation service will allow the maintenance of the level of comfort for the population achieved in a smart city even in the event of an emergency. This is fundamental to justify the enormous material costs for the rapid development of smart cities around the world against the background of emergencies that have become more frequent throughout the world.

**9 Draft new Recommendation ITU-T Y.4507 (ex Y.arc-psfws): [**[**R29**](https://www.itu.int/md/T22-SG20-R-0029/en)**]**

**A functional architecture of power supply facilities warning system**

**Summary**

The early warning system of power supply facilities based on Internet of Things technology can obtain the real-time status parameters of power equipment and realize equipment status prediction and fault early warning through the status assessment and early warning model. It can improve the operation economy of assets and ensure the reliability of power supply. It is necessary to put forward a warning system for power supply facilities. This Recommendation provides the functional architecture of a power supply facility warning system, use cases and data flows.

**10 Draft new Recommendation ITU-T Y.4508 (ex Y.DPM-alm-fra): [**[**R30**](https://www.itu.int/md/T22-SG20-R-0030/en)**]**

**Functional requirements and architecture of blockchain-based activity log management for Internet of things (IoT) data processing and management**

**Summary**

There are many Internet of things (IoT) platforms to process and manage same IoT data in different stages and in different areas. In traditional solutions, each of the IoT platforms usually stores its activity logs for IoT data processing and management (IoT DPM) into its storage separately. Those activity logs are separated and managed by the IoT platforms. Therefore, the accessibility and trustworthiness of those activity logs are not guaranteed and it is not easy to trace activities about IoT DPM in the full lifecycle for activity logs that are stored and managed by different IoT platforms.

In order to trace activities about IoT DPM, different IoT platforms may use the same activity log storage and related functionalities. Activity log management (ALM) enabled by blockchain technologies provides functionalities to manage activity logs for IoT DPM in the full lifecycle across IoT platforms. Different IoT platforms can individually save activity logs of IoT DPM into trustworthy shared storage via the ALM for IoT DPM. When they read activity logs of IoT DPM via the ALM, they can obtain all the relevant activity logs of IoT DPM in the full lifecycle from the trustworthy shared storage via the ALM for IoT DPM, if authorized. The ALM and the trustworthy shared storage are based on blockchain technologies and can protect the activity logs from tampering. The ALM can facilitate IoT platforms’ storing and tracing of activity logs of IoT DPM in the full lifecycle transparently and trustworthily.

This Recommendation presents a blockchain-based ALM for IoT data processing and management, and specifies its characteristics, functional requirements and architecture.

**11 Draft new Recommendation ITU-T Y.4706 (ex Y.dem-IoT): [**[**R31**](https://www.itu.int/md/T22-SG20-R-0031/en)**]**

**Data exchange model for Internet of things (IoT) devices in power transmission and transformation equipment**

**Summary**

The Internet of things (IoT) devices in power transmission and transformation equipment can meet the demand for comprehensive and accurate data acquisition for power transmission and transformation equipment. Developing a data exchange model that takes into account the utilization of applications, sharing, coordination is essential for the construction of a system for IoT-based power transmission and transformation equipment.

This Recommendation provides the requirements and model of IoT data exchange in power transmission and transformation equipment.

**12 Draft new Recommendation ITU-T Y.4499 (ex Y.UIM-cs-framework): [**[**R32**](https://www.itu.int/md/T22-SG20-R-0032/en)**]**

**Framework for urban infrastructure monitoring based on crowdsourcing**

**Summary**

Recommendation ITU-T Y.4499 specifies a framework for urban infrastructure monitoring based on crowdsourcing, including requirements, functional architecture, common procedures, as well as security and privacy considerations.

Urban infrastructure includes the physical facilities and systems that a city must have for its operation and development. It has the characteristics of large quantity, wide distribution and high management difficulty. Crowdsourcing is the practice of engaging a group of people for a common goal. It can provide a scalable and financially viable way to monitor urban infrastructure.

**Annex 2**

**Subject: Member State response to TSB Circular 236:  
Consultation on Determined draft new Recommendations ITU-T Y.4506 (ex Y.DRI-arch), Y.4229 (ex Y.IoT-SFFS), Y.4230 (ex Y.EV-charging), Y.4231 (ex Y.IoT-Vreqs), Y.4232 (ex Y.IoT-RTPS), Y.4233 (ex Y.FSPH), Y.4234 (ex Y.RemoteEd), Y.4222 (ex Y.smart-evacuation), Y.4507 (ex Y.arc-psfws), Y.4508 (ex Y.DPM-alm-fra), Y.4706 (ex Y.dem-IoT) and Y.4499 (ex Y.UIM-cs-framework)**

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| **To**: | Director of the  Telecommunication Standardization Bureau,  International Telecommunication Union  Place des Nations  CH 1211 Geneva 20, Switzerland | **From**: | [Name]  [Official role/title]  [Address] |
| **Fax**:  **E-mail**: | +41-22-730-5853  [tsbdir@itu.int](mailto:tsbdir@itu.int) | **Fax**:  **E-mail**: |  |
|  |  | **Date**: | [Place,] [Date] |

Dear Sir/Madam,

With respect to the Member State consultation on the Determined draft texts listed in TSB Circular 236, I would like to advise you of the opinion of this Administration, which is set out in the table below.

|  | **Select one of the two boxes** |
| --- | --- |
| **Draft new Recommendation ITU-T Y.4506 (ex Y.DRI-arch)** | **assigns authority** to Study Group 20 to consider this text for approval (in which case, select one of the two options ⃝):  ⃝ No comments or suggested changes  ⃝ Comments and suggested changes are attached |
| **does not assign authority** to Study Group 20 to consider this text for approval (reasons for this opinion and an outline of possible changes that would enable the work to progress are attached) |
| **Draft new Recommendation ITU-T Y.4229 (ex Y.IoT-SFFS)** | **assigns authority** to Study Group 20 to consider this text for approval (in which case, select one of the two options ⃝):  ⃝ No comments or suggested changes  ⃝ Comments and suggested changes are attached |
| **does not assign authority** to Study Group 20 to consider this text for approval (reasons for this opinion and an outline of possible changes that would enable the work to progress are attached) |
| **Draft new Recommendation ITU-T Y.4230 (ex Y.EV-charging)** | **assigns authority** to Study Group 20 to consider this text for approval (in which case, select one of the two options ⃝):  ⃝ No comments or suggested changes  ⃝ Comments and suggested changes are attached |
| **does not assign authority** to Study Group 20 to consider this text for approval (reasons for this opinion and an outline of possible changes that would enable the work to progress are attached) |
| **Draft new Recommendation ITU-T Y.4231 (ex Y.IoT-Vreqs)** | **assigns authority** to Study Group 20 to consider this text for approval (in which case, select one of the two options ⃝):  ⃝ No comments or suggested changes  ⃝ Comments and suggested changes are attached |
| **does not assign authority** to Study Group 20 to consider this text for approval (reasons for this opinion and an outline of possible changes that would enable the work to progress are attached) |
| **Draft new Recommendation ITU-T Y.4232 (ex Y.IoT-RTPS)** | **assigns authority** to Study Group 20 to consider this text for approval (in which case, select one of the two options ⃝):  ⃝ No comments or suggested changes  ⃝ Comments and suggested changes are attached |
| **does not assign authority** to Study Group 20 to consider this text for approval (reasons for this opinion and an outline of possible changes that would enable the work to progress are attached) |
| **Draft new Recommendation ITU-T Y.4233 (ex Y.FSPH)** | **assigns authority** to Study Group 20 to consider this text for approval (in which case, select one of the two options ⃝):  ⃝ No comments or suggested changes  ⃝ Comments and suggested changes are attached |
| **does not assign authority** to Study Group 20 to consider this text for approval (reasons for this opinion and an outline of possible changes that would enable the work to progress are attached) |
| **Draft new Recommendation ITU-T Y.4234 (ex Y.RemoteEd)** | **assigns authority** to Study Group 20 to consider this text for approval (in which case, select one of the two options ⃝):  ⃝ No comments or suggested changes  ⃝ Comments and suggested changes are attached |
| **does not assign authority** to Study Group 20 to consider this text for approval (reasons for this opinion and an outline of possible changes that would enable the work to progress are attached) |
| **Draft new Recommendation ITU-T Y.4222 (ex Y.smart-evacuation)** | **assigns authority** to Study Group 20 to consider this text for approval (in which case, select one of the two options ⃝):  ⃝ No comments or suggested changes  ⃝ Comments and suggested changes are attached |
| **does not assign authority** to Study Group 20 to consider this text for approval (reasons for this opinion and an outline of possible changes that would enable the work to progress are attached) |
| **Draft new Recommendation ITU-T Y.4507 (ex Y.arc-psfws)** | **assigns authority** to Study Group 20 to consider this text for approval (in which case, select one of the two options ⃝):  ⃝ No comments or suggested changes  ⃝ Comments and suggested changes are attached |
| **does not assign authority** to Study Group 20 to consider this text for approval (reasons for this opinion and an outline of possible changes that would enable the work to progress are attached) |
| **Draft new Recommendation ITU-T Y.4508 (ex Y.DPM-alm-fra)** | **assigns authority** to Study Group 20 to consider this text for approval (in which case, select one of the two options ⃝):  ⃝ No comments or suggested changes  ⃝ Comments and suggested changes are attached |
| **does not assign authority** to Study Group 20 to consider this text for approval (reasons for this opinion and an outline of possible changes that would enable the work to progress are attached) |
| **Draft new Recommendation ITU-T Y.4706 (ex Y.dem-IoT)** | **assigns authority** to Study Group 20 to consider this text for approval (in which case, select one of the two options ⃝):  ⃝ No comments or suggested changes  ⃝ Comments and suggested changes are attached |
| **does not assign authority** to Study Group 20 to consider this text for approval (reasons for this opinion and an outline of possible changes that would enable the work to progress are attached) |
| **Draft new Recommendation ITU-T Y.4499 (ex Y.UIM-cs-framework)** | **assigns authority** to Study Group 20 to consider this text for approval (in which case, select one of the two options ⃝):  ⃝ No comments or suggested changes  ⃝ Comments and suggested changes are attached |
| **does not assign authority** to Study Group 20 to consider this text for approval (reasons for this opinion and an outline of possible changes that would enable the work to progress are attached) |

Yours faithfully,

[Name]

[Official role/title]

Administration of [Member State]

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