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Technologies de l'information — Indicateurs des TIC dans les villes intelligentes

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Smart city is a concept that has been widely used by city administrators, planners and implementers for decades. Although the precise definition of smart city has not been agreed upon among different international standardization organizations, the significance of information and communication technology (ICT) as indispensable key enablers is universally recognized. During the global development of smart cities, the issue of effectively adopting ICT in smart city programs as key enablers has become a common focus among scientific research institutions, industries, city administrators and construction implementers. This document supports the United Nations Sustainable Development Goals[1][7][8].

It is an urgent and important task to develop standard evaluation methods and indicators focusing on the area of ICT within the smart city, with which the city stakeholders can understand the smart city performance from the perspective of ICT. The evaluation methods and indicators focus on the individual efficient functioning of different systems, infrastructures and facilities. In addition, they also provide the guidance on how cities function holistically and facilitate innovation and growth in an integrated and coherent way.

The purpose of establishing smart city ICT indicator systems and conducting smart city evaluations is to guide and promote a systematic construction of a smart city. The indicators can be used as a whole package to evaluate a smart city holistically. The package can also be tailored as individual parts when evaluating cities or certain aspects of cities. The indicators can be used to:

— evaluate the city ICT preparation state before starting the smart city construction;

— evaluate the effect of city ICT during and after the smart city construction;

— compare the smart city construction between cities in the area of city ICT in a certain area to promote smart city healthy competition and development.

This document establishes criteria to evaluate in making cities smarter. This document can be used to evaluate the level of smart city development. It is applicable to city, municipality or the local government. For city administration organizations, it can be used for self-evaluation and to develop corresponding ICT strategies to make cities smarter. For related evaluation agencies and scientific research institutions, it also provides guidance and reference in developing smart city ICT indicators.

The indicators in this document are consistent with the overall work of ISO/TC 268/WG 2 on smart city indicators.

Information technology — Smart city ICT indicators

1 Scope

This document defines a comprehensive set of evaluation indicators specially related to information and communication technologies (ICT) adoption and usage in smart cities. Firstly, it establishes an overall framework for all the indicators. Then, it specifies the name, description, classification and measurement method for each indicator.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purpose of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
performance indicators
<generic> category of quantized and pre-authorized benchmarks that reflect the realization of the goals

[SOURCE: ISO 15746-1:2015, 2.7]

3.2
performance indicators
<smart city> set of indicators used to measure the level of convenience, habitability, comfort, security and happiness felt by city users for related ICT infrastructures, applications and services in developing a smart city

3.3
capability indicators
<smart city> set of indicators used to measure the level of design, development, innovation and coverage area of ICT infrastructures, applications and services in developing a smart city

3.4
e-government
digital interaction between a government and citizens, government and businesses, and between government agencies

[SOURCE: ISO 19101-1:2014,4.1.10]

3.5
city model
appropriate set of data which models those physical and social aspects of the city that are relevant for its objectives

3.6
real-world feature
physical or social feature that exists in the city

EXAMPLE Buildings and voting districts.

3.7
feature catalogue
agreed set of feature types which represent those *real-world features* (3.6) in the *city model* (3.5)

4 Abbreviations

API application programming interface

APP application

CCTV closed circuit television

FTTH fiber to the home

ICT information and communication technologies

5 General architecture

The general architecture of smart city ICT indicators is shown in Figure 1. From the figure, the taxonomy of indicators in this document is defined.

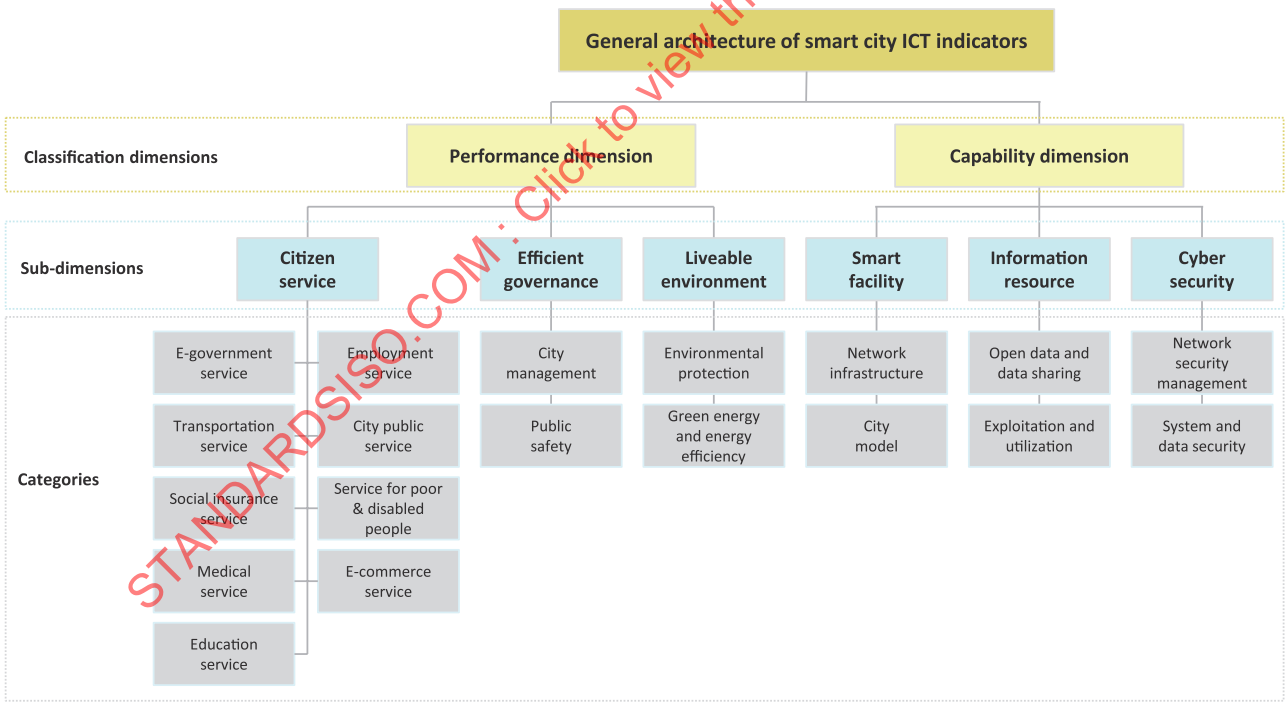

Figure 1 — General architecture of smart city ICT indicators

Smart city ICT indicators are classified as performance indicators and capability indicators. The smart city performance indicators include citizen service level, efficient governance level and liveable environment level. The smart city capability indicators include the smart facility level, information resource level and cyber security level.

The system of smart city ICT indicators is categorized into two dimensions and each dimension includes three levels. First-level and second-level indicators are basic classifications of indicators. Third-level indicators are specific indicators which are used in the smart city evaluation process.

6 General principles

6.1 Indicators selection

The design principles of the smart city ICT indicators are provided as below:

— Clear and unambiguous

  — Each indicator needs to have a clear definition and measurement method.

  — A measurement method needs to be a simple formula.

— Scientific and reasonable

  — The indicators need to reflect the connotations and characteristics of the smart city.

  — The quantity of listed indicators needs to be reasonable. There is no need to have too many indicators.

— Representative

  — The indicators need to be citizen oriented and performance oriented. A large proportion of performance indicators are related with citizen benefits and citizen experience.

  — The indicators need to take the vision of the city into account.

— Collectable and quantifiable

  — The indicators need to be objective, not subjective.

  — The indicators need to have a clear data source.

— Consistent

  — The indicators need to be in line with related International Standards.

— Continuously updated

  — The indicators need to be continuously updated with the development status of the smart city.

6.2 Indicators description

In this document, tables are used to describe the indicators. Each table has 4 columns named by number, indicator name, description and measurement method.

The system of smart city ICT indicators includes three levels, as shown in Figure 1. This document uses "*L1*" to "*Ln*" to represent the first-level indicators. For example, it uses "*L1*" to represent the first-level indicator. "*L1.1*" represents the second-level indicator which is categorized into the first-level indicator "*L1*". "*L1.1.1*" represents the third-level indicator which is classified to the second-level indicator "*L1.1*".

When specifying the measuring method of each indicator, a hundred-mark system is adopted in this document.

7 Indicators description

7.1 Citizen service

7.1.1 E-government service

The indicator "e-government service" is used to assess the convenience of government services. This indicator is used to assess the ICT's contribution to the performance of the government to promote innovative services for citizens.

Related third-level indicators are shown in Table 1.

Table 1 — Evaluation indicators related to e-government service

Number	Indicator name	Description	Measurement method
L1.1.1	Percentage of one-stop government services	Physical convenience evaluation of government services, that all required procedures can be processed at one physical location	(number of one-stop government services/ total number of government services) × 100
L1.1.2	Percentage of government services which can be solved via single sign in	Online convenience evaluation of government services	(number of government services which can be accessed via single web portal/total number of government services) × 100
L1.1.3	Implementation of electronic or digital signature	Effectiveness of implementation of electronic/digital signatures	(number of governmental services or departments using digital signatures/total number of governmental services in the city) × 100
L1.1.4	Percentage of citizen service requests which can be processed appropriately by government	Evaluation of government service effectiveness based on citizen requests	(number of citizen requests processed correctly/total number of citizen requests) × 100 NOTE Citizen requests from citizens to local government to cope with the problems in public services, which are submitted through the phone call, e-mail, social media and messages through APPs.

7.1.2 Transportation service

The indicator "transportation service" is used to assess the ICT's contribution to the convenience of public transportation services and travel information services.

Related third-level indicators are shown in Table 2.

Table 2 — Evaluation indicators related to transportation service

Number	Indicator name	Description	Measurement method
L1.2.1	Release of operation information of public transportation services	Evaluation of public transportation information service	(b1 + b2 + b3), where b1 = 60, when a city has opened the public transportation information, including real time status of transportation services; otherwise b1 = 0; b2 = 20, when a city has opened the public transportation information through at least one of e-board, TV, broadcasting, APPs and etc.; otherwise b2 = 0; b3 = 20, when a city has opened the public transportation information at the level of second tier main roads and above; otherwise b3 = 0. NOTE City road network includes fast track, main road, second tier main road, minor road and bypass.
L1.2.2	Percentage of available forecasting information of public vehicles	Evaluation of public transportation forecasting service	(number of public transportation routes supporting real time arrival forecast/total number of public transportation routes) × 100
L1.2.3	Percentage of e-payment used in public vehicles	Evaluation of public transportation payment service	(average number of trips per day using e-payment on public transportation/total average number of trips per day taking public transportation) × 100

7.1.3 Social insurance service

The indicator "social insurance service" is used to assess the ICT's contribution to the effectiveness of public social insurance services.

Related third-level indicators are shown in Table 3.

Table 3 — Evaluation indicators related to social insurance service

Number	Indicator name	Description	Measurement method
L1.3.1	Online social insurance service	Evaluation of online social insurance service	online services provided via: Web sites, self-service machines, APPs on cell phone, hotline and short message. 25 points for each method, the total score is 100
L1.3.2	Percentage of communities supporting self-service for social insurance services	Evaluation of communities supporting social insurance services in self-service way	(number of communities supporting self-service for social insurance services/total number of residence communities) × 100
L1.3.3	Degree of social insurance services which are available across the city	Evaluation of promoting social insurance services that are available across the city	services across the city include: social insurance relationship transfer, social insurance authentication, balance accounts of medical service, social security status inquiry and comparison. 25 points for each service, the total score is 100

7.1.4 Medical service

The indicator "medical service" is used to assess ICT's contribution to the efficiency of health services.

Related third-level indicators are shown in Table 4.

Table 4 — Evaluation indicators related to medical service

Number	Indicator name	Description	Measurement method
L1.4.1	Percentage of medical institutions that have established e-medical records	Evaluation of promoting smart health care and citizen services to improve the efficiency and quality of medical services by using e-medical records	(number of medical institutions which have established e-medical records/ total number of medical institutions in a city) × 100
L1.4.2	Percentage of treatment appointment of medical services institutions	Evaluation of promoting treatment appointment to improve the efficiency and quality of medical services	(annual number of appointed treatments provided by medical institution/annual number of treatments provided by medical services) × 100
L1.4.3	Percentage of e-health records usage	Evaluation of promoting smart health care and citizen services to improve the efficiency and quality of health care services by using e-health records	(annual number of treatments with usage of e-health records/annual number of treatments) × 100
L1.4.4	Coverage rate of community e-health services	Coverage rate of community e-health services	(number of citizens in the city who can access the e-health services)/(total number of citizens in the city) × 100
L1.4.5	Proportion of electronic health records archived, used and shared	Ratio of residents who have the electronic health records	(number of citizens in the city who have the e-health records)/(total number of citizens in the city) × 100

7.1.5 Education service

The indicator "education service" is used to assess ICT's contribution to the convenience and inclusiveness of education services, especially the possibility to access smart e-learning systems.

Related third-level indicators are shown in Table 5.

Table 5 — Evaluation indicators related to education service

Number	Indicator name	Description	Measurement method
L1.5.1	Percentage of classrooms with multimedia equipment, such as TVs, projectors and so on	Evaluation of establishing smart e-learning systems	(number of schools which have multimedia equipment in each classroom/ total number of schools) × 100
L1.5.2	Percentage of schools with wireless access	Evaluation of using network as an enabling technique to provide e-learning services	(number of schools providing on campus wireless network access/total number of schools) × 100

7.1.6 Employment service

The indicator "employment service" is used to assess the performance of ICT technologies to improve employment services by providing online information and services.

Related third-level indicators are shown in Table 6.

Table 6 — Evaluation indicators related to employment service

Number	Indicator name	Description	Measurement method
L1.6.1	Coverage rate of population having access to employment information service	Evaluation of providing employment information to improve the level of employment services	(number of unemployed people able to get access to employment information/ recorded number of unemployed people) × 100

Table 6 *(continued)*

Number	Indicator name	Description	Measurement method
L1.6.2	Usage of online delivery of employment services	Evaluation of delivering online employment service in various ways	online service can be delivered via: Web sites, self-service machines, APPs on cellphone, and hotline & short message. 25 points for each method, the total score is 100

7.1.7 City public service

The indicator "city public service" is used to assess the performance and inclusiveness of public services through Internet.

Related third-level indicators are shown in Table7.

Table 7 — Evaluation indicators related to city public service

Number	Indicator name	Description	Measurement method
L1.7.1	Provision of municipal services through mobile Internet	Evaluation of providing municipal services through mobile Internet	2 points for each municipal service provided via mobile Internet, the highest score up to 70. Municipal services include, but not limited to: utility payment (including at least water, electricity and gas), hospital appointment, vehicle violation query, vehicle fine payment, public transport ticket purchase, main scenic spot ticket purchase, tourism problem complaints and other life services, and social security query, provident fund query, tax service, entry-exit service, marriage service appointment, birth certificate service, motor vehicle and driver's license services, environmental problem complaints and other government services.
L1.7.2	Usage of municipal services through mobile Internet	Evaluation of using municipal services through mobile Internet	(number of users using municipal services through mobile Internet/permanent resident population) × 100
L1.7.3	Usage of one card/device solution	Evaluation of using one card/device solution: that all services and applications in a particular field can be accessed via one card/device	10 main fields of one card/device solution application: comprehensive city transportation (including bus, subway, light rail, ferry, taxi, and public bike), utility bills, social insurance services, scenic spots, residential communities, parking lot management, supermarket payment, floating population management, social endowment and helping disabled people. 10 points for supporting each field application, the total score is 100.

7.1.8 Service for poor and disabled people

The indicator "service for poor and disabled people" is used to assess the service performance for poor people and disabled people by means of ICT.

Related third-level indicators are shown in Table 8.

Table 8 — Evaluation indicators related to service for poor and disabled people

Number	Indicator name	Description	Measurement method
L1.8.1	Percentage of e-record coverage for low-income households	Evaluation of providing e-records for low-income households	(number of low-income households with e-records/total number of low-income households) × 100
L1.8.2	Performance of Internet accessibility for disabled people	Evaluation of providing Internet accessibility for disabled people	(b1 + b2 + b3), where b1 = 50, if Internet easy access for disabled people is supported by municipal government main portals; otherwise b1 = 0; b2 = 30, if the percentage of Internet easy access for disabled people among municipal government main portals is over 90 %; b2 = 20, if over 60 %; b2 = 10 when over 30 %; b2 = 0, if less than 30 %; b3 = 20, if Internet easy access for disabled people is supported by all municipal mainstream media portals (top 3 views); b3 = 10, when one supports; b3 = 0, when none supports.

7.1.9 E-commerce service

The indicator “e-commerce service” is used to assess how e-commerce accelerates economic growth, transformation and upgrade.

Related third-level indicators are shown in Table 9.

Table 9 — Evaluation indicators related to e-commerce service

Number	Indicator name	Description	Measurement method
L1.9.1	Percentage of online retail[a]	Evaluation of the performance of online retail	(online retail sales/total sales) × 100
L1.9.2	Percentage of online cross-border trading[b]	Evaluation of the performance of online cross border trading	(sum of online cross border trading/total sum of cross border import and export) × 100

[a] The online retail operator is registered in the city.

[b] The online cross-border trading operator is registered in the city.

7.2 Efficient governance

7.2.1 City management

The indicator “city management” is used to assess the performance of city management using ICT methods and the development level of smart municipal infrastructures.

Related third-level indicators are shown in Table 10.

Table 10 — Evaluation indicators related to city management

Number	Indicator name	Description	Measurement method
L2.1.1	Percentage of municipal pipe network which is under smart monitoring and management	Evaluation of the deployment of smart monitoring and management of municipal pipe network	(length of municipal pipe network which is under smart monitoring and management through IoT related techniques/total length of municipal pipe network) × 100
L2.1.2	Coverage rate of underground pipe gallery	Evaluation of the deployment of underground pipe gallery	(length of underground pipe gallery in urban district, parks and development zones/ length of new road in new urban district, parks and development zones) × 100

7.2.2 Public safety

The indicator "public safety" is used to assess the performance of public safety video monitoring systems.

Related third-level indicators are shown in Table 11.

Table 11 — Evaluation indicators related to public safety

Number	Indicator name	Description	Measurement method
L2.2.1	Collection and coverage of closed circuit television (CCTV)	Evaluation of the application of networked public safety video surveillance	(b1 × 0,25 + b2 × 0,2 + b3 × 0,15 + b4 × 0,25 + b5 × 0,15), where b1 = (number of key public areas which have CCTV coverage/number of key public areas which should have CCTV coverage) × 100; b2 = (number of HD video cameras in key public areas/number of video cameras in key public areas) × 100; b3 = (number of key industry and field areas related to public security which have CCTV coverage/number of those key areas which should have CCTV coverage) × 100; b4 = (number of available cameras in key public areas/total number of cameras in key public areas) × 100; b5 = (number of available cameras in key industry and field areas related to public security/total number of installed cameras in those key areas) × 100. NOTE The key public areas, industry and field areas are identified by the city according to local policy.

Table 11 *(continued)*

Number	Indicator name	Description	Measurement method
L2.2.2	Internet connection rate and sharing level of public security CCTV	Evaluation of the building of social security prevention and control system, promoting networked public safety video surveillance applications	(b1 × 0,3 + b2 × 0,2 + b3 × 0,5), where b1 = (number of CCTV cameras in key public areas that have been connected to image and video sharing platform/total number of CCTV cameras in key public areas) × 100; b2 = (number of CCTV cameras in key industry and field areas related to public security that have been connected to image and video sharing platform/total number of CCTV cameras in those key areas) × 100; b3 = 100, when it is agreed on public security image and video sharing between government departments; otherwise b3 = 0.
L2.2.3	Public safety video footage and frame to enhance the social management ability	Evaluation of the building of social security prevention and control system, promoting networked public safety video surveillance applications	(b1 × 0,5 + b2 × 0,5), where b1 = (annual number of investigated criminal cases assisted by CCTV/total annual number of investigated criminal cases) × 100; b2 = 100, when the number of departments other than public security department that use public safety image and video service is more than 4; otherwise b2 = 0.

7.3 Liveable environment

7.3.1 Environmental protection

The indicator "environmental protection" is used to assess the performance of environment monitoring, publishing and disposition capabilities.

Related third-level indicators are shown in Table 12.

Table 12 — Evaluation indicators related to environmental protection

Number	Indicator name	Description	Measurement method
L3.1.1	Online monitoring of key pollution sources[a]	Evaluation of the development of smart environment monitoring	(number of key pollution sources which have achieved automatic online monitoring/total number of key pollution sources) × 100
L3.1.2	Openness of environmental information from enterprises and public institutions	Evaluation of the level of environmental information openness	(number of key pollution enterprises and public institutions[b] that have opened their environmental information to the public/number of key pollution enterprises and public institutions within the jurisdiction) × 100
L3.1.3	Disposal rate of city environmental problems	Evaluation of the disposal of environment problems	(number of disposed environmental incidents/number of reported environmental incident) × 100

[a] Key pollution sources are identified by the city according to local environmental development policy, strategy and related requirements; for example, the city can provide the list of key pollution sources.

[b] Refers to enterprises and public institutions where the amount of discharged environmental pollutants has not reached the local requirements.

7.3.2 Green energy and energy efficiency

The indicator "green energy and energy efficiency" is used to assess the performance of ICT's contribution to energy saving and cost reducing.

Related third-level indicators are shown in Table 13.

Table 13 — Evaluation indicators related to green energy and energy efficiency

Number	Indicator name	Description	Measurement method
L3.2.1	Percentage of green buildings	Evaluation of the development of green city	(total construction area of new green buildings/total construction area of new buildings) × 100
L3.2.2	Online monitoring rate of key energy-using institutions[a]	Evaluation of energy saving	(number of key energy-using institutions that have been listed for online monitoring/total number of key energy-using institutions) × 100
[a] Key energy-using institutions are identified by the city according to local development policy, strategy and related requirements; for example, the city can provide the list of key energy-using institutions.			

7.4 Smart facility

7.4.1 Network infrastructure

The indicator "network infrastructure" is used to assess network access ability, the development of fixed and mobile urban networks.

Related third-level indicators are shown in Table 14.

Table 14 — Evaluation indicators related to services for network infrastructure

Number	Indicator name	Description	Measurement method
L4.1.1	Fixed broadband access ability, where fixed broadband means the high-speed data transmission to homes and enterprises using technologies such as T1, cable, DSL and fiber	Evaluation of the development of fixed broadband networks	(number of household fixed broadband access users/total number of households) × 100
L4.1.2	Fiber to the home (FTTH) penetration rate, where FTTH means the installation of optical fiber from the carrier directly into the home or office	Evaluation of the development of urban fixed broadband networks	(number of FTTH users/number of fixed broadband access users) × 100
L4.1.3	Mobile broadband access ability	Evaluation of the development of urban mobile broadband networks	(number of 3G and above mobile users/number of permanent residents) × 100

7.4.2 City model

The indicator "city model" is used to assess the availability of city model data, and its use by other systems in the city. For further information on the idea of a city model, see Annex A.

Related third-level indicators are shown in Table 15.

Table 15 — Evaluation indicators related to time-space geography platform

Number	Indicator name	Description	Measurement method
L4.3.1	Online city model information available to the public	Evaluation of the level of government sector and public use of the city model	(number of city model active users/number of permanent residents) × 100
L4.3.2	City model geographic coverage	Geographic proportion of the city for which an open standards based digital model of the physical and social features of the city exists	For the agreed feature catalogue, the geographic extent of the model divided by the geographic extent of the city. (hectares for which a sufficiently complete and accurate collection of relevant features is represented in the city model)/ (area of the smart city in hectares) × 100
L4.3.3	City model thematic coverage	Proportion of the features of interest to the city for which a digital model of the physical and social features of the city exists	For the agreed feature catalogue, the number of those features in the model divided by the number of those features in the city. Sum by feature type in the feature catalogue, of (number of feature instances in the model)/(number of real world features) × 100 NOTE In practice, this can only be assessed by sampling the real world.
L4.3.4	City model up to date	Digital object (feature) life cycles are managed in sync with the life cycles of the real world features	Proportion of the real world features of interest to the city which are created, amended, and deleted in the digital model within a reasonable time of that event in the real world. NOTE How much delay is “reasonable” depends on the uses to which the model is put in other systems. Given t_1 = (date & time of change to the feature instance in city model) – (date & time of real world change to that feature), and t_2 = “reasonable time” for that feature type. [Count ($t_1 < t_2$)]/(number of real world feature changes) × 100
L4.3.5	Use of the digital model in operational processes	Proportion of the city's operational business data explicitly related to the relevant feature instance in the digital model	Either: a) (number of operational city ICT systems which use the city model)/ (total number of operational city ICT systems) × 100; Or, in a city system where the ICT systems are more integrated: b) (number of operational business data objects which are related to city model feature instances)/(total number of operational business data objects) × 100
L4.3.6	Use of the digital model in crisis situations	Availability of the model in resilience tools that are used by the relevant authorities	(number of crisis management ICT systems which are able to use the city model)/(total number of such systems) × 100
L4.3.7	Use of the digital model in analytical processes	Proportion of the city's analytical processes which use the digital model	(number of analytical IT systems which are able to use the city model)/ (total number of such systems) × 100

Table 15 *(continued)*

Number	Indicator name	Description	Measurement method
L4.3.8	Use of the digital model in strategic processes	Availability/use of the model in city strategic decision making	(number of strategic decision support ICT systems which are able to use the city model)/(total number of such systems) × 100

7.5 Information resource

7.5.1 Open data and data sharing

The indicator "open data and data sharing" is used to assess the ratio of the information resources open to the public. This indicator is used to assess the level of data sharing among different government sectors and public information resources openness to the public.

Related third-level indicators are shown in Table 16.

Table 16 — Evaluation indicators related to open data and data sharing

Number	Indicator name	Description	Measurement method
L5.1.1	Public information resources openness ratio	Evaluation of the level of public information resources openness to the public	(category number of public information resources with open API/total category number of public information resources which are required to open according to the local policy) × 100
L5.1.2	Information sharing ratio among government sectors	Evaluation of the level of data sharing among government sectors	(number of government sectors which have established information resource table and provided data sharing service/ total number of government sectors) × 100

7.5.2 Exploitation and utilization

The indicator "exploitation and utilization" is used to assess the capabilities of information resources captured, used and explored by the government, enterprises and citizens for the purpose of capturing the impact of government-enterprise cooperation on developing public information infrastructures, providing innovation services and promoting precise urban governance.

Related third-level indicators are shown in Table 17.

Table 17 — Evaluation indicators related to exploitation and utilization

Number	Indicator name	Description	Measurement method
L5.2.1	Government-enterprise cooperation on information resources development	Impact of government-enterprise cooperation on developing public information infrastructure, providing innovation services and promoting efficient urban governance	10 urban governance fields: decision support for macroscopic readjustment and control, enterprise supervision, quality and safety, energy saving and consumption reduction, environmental protection, food safety, safety production, credit system construction, tourism service, emergency disposal. Each field realizing 2 or more application cases scores 10 points, the total score is 100.

Table 17 *(continued)*

Number	Indicator name	Description	Measurement method
L5.2.2	Government-citizen cooperation for city promotion	Impact of government-citizen cooperation on improving citizen services	1) Social monitoring usage to feedback citizen comments to city governance services for five urban governance fields: education, transportation, safety, tourism and disaster recovery. (50 points) 2) Intelligent facilities such as recommendation services for citizens through the wall mounted display in open space. (30 points according to the citizen usage) 3) Frequency of citizen public activities to create open data archives through social event. (20 points according to the grade of citizen engagement)

7.6 Cyber security

7.6.1 Network security management

The indicator "network security management" is used to assess the performance of ensuring cyber security by making security responsibility rules, coordination mechanism, using top design and risk controlling and emergency treatments.

Related third-level indicators are shown in Table 18.

Table 18 — Evaluation indicators related to network security management

Number	Indicator name	Description	Measurement method
L6.1.1	Organization coordinating mechanism for cyber security in smart cities	Evaluation of organization coordinating mechanism for cyber security in smart cities	Two requirements for cyber security in smart cities: 1) set up cyber security working mechanism for smart city; 2) fulfil the responsibility for cyber security at all levels. 100 points, when the mechanism is released as an official document and the two requirements above are fulfilled; 30 points, when the mechanism is released as official document and one requirement above is fulfilled; Otherwise, 0 point.