

10

MEDIA, COMMUNICATIONS AND INFORMATION TECHNOLOGY



Media, Communications and Information Technology

Macao enjoys freedom of the press, freedom of speech and freedom of publishing. Despite being relatively small, it has a sophisticated and well-developed media industry.

The Government strives to enhance the transparency of its administration and facilitate communication and dialogue with the media. This enables government messages to be delivered to the public promptly and accurately, and provides a wide range of information via the media. Furthermore, the Government expects the media to fully leverage its monitoring role, continually prompting every government department to improve its work and provide better-quality services to the community.

Macao's laws protect the rights of journalists to gather and receive news and information, and to report it, ensuring their journalistic independence.

Mass Media

Electronic Media

Macao has one free-to-air TV station, two radio stations and one cable TV station, as well as three locally based satellite TV stations.

Teledifusao de Macau (Macao Broadcasting Company, TDM) began providing public television broadcasting in 1984. Digital broadcasting commenced in 2008 and includes five free terrestrial digital broadcasting television channels, one satellite television channel, and several multimedia platforms. These are TDM Ou Mun (Channel 91), TDM Portuguese (Channel 92), TDM Information (Channel 94), TDM Sports (Channel 93), TDM Entertainment (Channel 95), and TDM-Macau Satellite (Channel 96) satellite television channel. TDM also offers services through its website (tdm.com.mo) and the TDM app for mobile devices, and on social media platforms such as Facebook, WeChat, YouTube, and Telegram.

TDM completed its merger with Macau Basic Television Channels Limited on 19 December 2023, with TDM as the surviving company. TDM now provides support services for residents to access basic television channels, including a total of 45 digital television channels (29 of which are also available in analogue form).

On 1 October 2023, TDM's TDM Ou Mun began broadcasting on the Guangdong Pearl River Delta TV Network (including the "Macao New Neighbourhood" in the Guangdong-Macao Intensive Cooperation Zone). Guangdong Radio and Television Network viewers can watch all TDM Ou Mun programs for 24 hours via the "Gudou TV" app within the network.

Radio Macau, a subsidiary of TDM, and the privately owned Radio Vila-Verde (Green Village) are Macao's two radio stations. Both broadcast 24 hours a day. Radio Macau features two channels: one in Chinese, the other in Portuguese.

Macao Cable TV has been broadcasting since July 2000, and offers 96 channels (71 basic channels, 17 premium channels, five test channels, and three dedicated hotel channels); each is aired 24 hours per day.

MSTV Satellite TV Company Limited – originally known as the Cosmos Satellite Television Company, which was the first operator to be granted a licence to provide satellite television services in Macao – has offered the MSTV News Channel since January 2009, broadcasting 24 hours a day.

The Chinese channel of the MASTV Company began operations in June 2001. It broadcasts 24 hours a day.

Macao Lotus Satellite TV Media Limited started its broadcasting service on 1 January 2009, on its Macao Lotus TV 24-hours-per-day channel.

Print Media

The history of Macao's newspaper industry can be traced back over 100 years. From 1839 to 1840, while enforcing the opium ban in Guangdong, Lin Zexu commissioned a selective translation of the English *Macao Monthly* and, for administrative purposes, published *Journal News of Macao* in Guangzhou. On 18 July 1893, Dr Sun Yat Sen and a Macanese named Francisco H. Fernandes worked together and founded *Echo Macanese*, which was published in Chinese and Portuguese. On 22 February 1897, Kang Youwei and Liang Qichao founded *The Reformer China*. After the 1911 Revolution in China, Macao's Chinese newspapers began to flourish. Several newspapers, such as *Ao Men Shi Bao* (Macao Times), *Hao Jing Wan Bao* (Oyster Mirror Evening Post), *Ao Men Tong Bao* (Macao Bulletin), and *Hao Jing Ri Bao* (Oyster Mirror Daily), were founded at this time.

Currently, Macao has 13 Chinese-language daily newspapers, which print a total of over 100,000 copies each day. Macao also has several Chinese-language weeklies.

Portuguese daily newspapers have an even longer history than the Chinese dailies. In 1822, *Abelha da China*, the first-ever daily in China, was founded and published in Portuguese. Other early-founded Portuguese papers founded in Macao include *Gazeta de Macau* (Macao Gazette), *Imparcial* (The Impartial), and *Correio de Macau* (Macao Post). Macao currently has three Portuguese dailies. There are two Portuguese-Chinese bilingual weeklies, and two English-language daily newspapers in Macao.

Newspapers and magazines published in Hong Kong, mainland China and overseas are also available in Macao. In addition, Macao residents also enjoy access to radio and TV programmes made in Hong Kong and mainland China.

Media Stationed in Macao

Xinhua News Agency, People's Daily, China News Service (CNS) and Lusa-Portuguese News Agency have branches in Macao. Other media organisations with resident correspondents in Macao include China Media Group (CMG); the State Administration of Radio, Film and Television; Wen Hui Bao (Shanghai); Southern Finance Omnimedia Group (SFC); Hong Kong Economic Journal (HKEJ); EyePress News Agency; Radio Television Hong Kong (RTHK); Television Broadcasts Limited, Hong Kong (TVB), Phoenix TV and Hong Kong Ta Kung Wen Wei Media Group Limited.

Journalists' Associations

The journalists' associations in Macao include the Macao Media Workers Association, the Macao Journalists Club, the Macao Journalists Association, the Macao Media Club, the Macao Sports Press Association, the Macao Portuguese and English Press Association and the Macao Youth Media Association.

Government Information Bureau

The Government Information Bureau (GCS) is a bureau-level administrative entity under the supervision of the Chief Executive. It assists government departments and the media by coordinating and conducting research regarding public communication, disseminating government information and arranging media interviews.

The GCS regularly publishes *Macao Magazine*, the Macao Information booklet and the *Macao Yearbook* in Chinese, Portuguese and English; and is gradually increasing the release of new information through new media and mobile networks.

The GCS is committed to expanding its services in social media and new media, offering a variety of information to the media and the general public, including the Macao Gov News mobile app, an official Macao Gov Info WeChat account, a YouTube channel, a Facebook page, a Telegram channel, an Instagram account, MSAR Release Weibo and WeChat accounts, and a Toutiao account Macaugscn, which is published in Macao and the Greater Bay Area, a WeChat audiovisual account and a Douyin account. The GCS publishes the *Macao Yearbook* and *Macao Magazine* in Chinese, English and Portuguese, and launches their websites and mobile applications, allowing readers to conveniently browse related information.

Regarding promotions in mainland China: the GCS continuously seeks cooperation with influential integrated media organisations in mainland China, with a view to strengthening the promotion of news and information in the Greater Bay Area, and to better tell of Macao's role in developing the Greater Bay Area. The GCS also cooperates with Greater Bay Radio from the Hong Kong-Macao-Taiwan Programme Centre of the China Media Group on a long-term basis, including through providing assistance with organising special reports involving the broadcast team and the new media team, as well as the collective production of a new media series, "Visit Macao" and a special column "Macao is My Home". The articles and radio features were re-posted and published on various platforms of the Central Government and the Greater Bay Area. Furthermore, the GCS continued cooperating with the People's Daily Online in the production of "Micro Macao" video series.

Disseminating Government Information

The GCS launched self-developed systems, such as the news information submission system (E-info Submit), news information management system (E-info Management) and news information dissemination system (GovInfo Hub), thus building a reliable, safe way for the receiving and release of official MSAR Government news. This also accelerates the news release process, and strengthens

the mechanism for exchanging information.

Also, the GCS introduced a mechanism for the receiving and release of civil defence news and automatic informational. Meanwhile, the weather alert notification service from the Meteorological and Geophysical Bureau commenced, to send messages to news reporters through instant messaging applications, and publish the messages on public websites, to help with enhancing the timeliness and effectiveness of the release of important news from the government.

At the end of 2022, the GCS expanded the hardware and software of its information dissemination platform, which significantly enhanced the capacity of the website. Also, the structure of the GCS's website was redesigned and reconstructed to cope with greater load requirements in future.

In 2023, the GCS drafted, released and assisted various departments in publishing a total of 16,240 news items (press releases, press invitations, important notices, and speeches) in Chinese, Portuguese and English, as well as 303 video clips and 567 sets of photographs. In all, 867 press releases were written, 566 press photos were taken, and 48 news videos were produced by the GCS.

The GCS's *MSAR News* mobile app continued providing residents with real-time policy information, official news and photos, videos, trending images and local real-time weather reports.

When there were news events, such as the Chief Executive's annual Policy Address, the question-and-answer session at the Legislative Assembly and the Chief Executive's press conference, the GCS live-streamed the events via its YouTube channel and Facebook page.

Registration of Periodicals

The Information Department of the GCS is responsible for registering newspapers, publishers and periodicals. Under the Media Registration Regulations, if a daily publication is registered but has not been published for 180 days, or if other registered periodicals have not been published for a period of one year or have been suspended for a period of one year, their registration will be cancelled. Registration of publications is free of charge.

In 2023, there were 110 publications registered with the GCS, including eight which were newly registered. Meanwhile, 21 publications cancelled their registrations during the year.

GCS Publication

Macao Magazine is published in Chinese, Portuguese and English, as the GCS's publication for promoting the MSAR to external audiences. It features various themes and features, in accordance with the editorial strategy of promoting the development of the MSAR and the Government's policies and initiatives to readers in Macao and overseas, reflecting the latest developments in the social, economic and livelihood aspects of the MSAR, to give readers an overall understanding of all aspects of Macao.

The Government Portal

The Government portal (www.gov.mo) was officially launched in December 2004. It offers a

comprehensive platform for information and e-services provided by all Government departments. The portal gives the public access to information from various public administrative departments, the Legislative Assembly, courts, the Public Prosecutions Office and tertiary education institutions.

Available in both traditional and simplified Chinese, Portuguese and English versions, the Government portal provides general information and updates about Macao to local residents, tourists and the business community, and introduces various public services and their contact details.

The portal's objectives are to announce government policies in a timely manner, enhance communication between the Government and the public, maintain administrative transparency, and collect public opinion.

Government Printing Bureau

The Government Printing Bureau is responsible for the publication of the *Macao Special Administrative Region Gazette* ("the Gazette"); the development and management of the *Gazette's* information dissemination platform and the "Accessible Legal Search" legal enquiry system; the production of the MSAR's policy addresses, budgets, general accounts and reports on budget implementation, public policy consultation documents, laws and regulations of Macao (in both separate and omnibus formats), any official printed matter that uses the emblem of Macao, any government forms, certificates and licences published in the *Gazette*, as well as printed materials with confidential contents or printed materials that require special security measures or close supervision; and the sale of printed materials published by governmental departments and other institutions.

The Macao SAR Gazette

Sections One and Two of the *Macao SAR Gazette* ("the Gazette") are published at 9:00am every Monday and Wednesday, respectively; unless either of these days is a public holiday, in which case the pertinent section is published on the next working day. Announcements of urgent or ad-hoc matters that occur outside this schedule may be issued in a supplement or special section.

Announcements and documents that must be published in Section One of the *Gazette* include:

1. Laws;
2. By-laws;
3. Legislative Assembly resolutions;
4. Administrative orders and orders approved by the Chief Executive;
5. Orders approved by principal government officials;
6. Related international treaties signed in the name of "Macao, China";
7. Results of Legislative Assembly elections;
8. The appointment of members of the Legislative Assembly, the appointment and termination of appointment of executive council members, the appointment and termination of appointment of presidents and judges at all levels of the courts and of public prosecutors,

as well as other announcements of appointments and terminations of appointments under the law; and

9. Other documents that are to be announced in Section One of the *Gazette* by law.

In addition, the following announcements and documents must also be published in Section One of the *Gazette*:

1. Amendments to the Basic Law of the MSAR, proposals to amend the Basic Law, and interpretations of the Basic Law by the authorised entity;
2. National laws that apply to the MSAR, and interpretations of those laws by the Standing Committee of the National People's Congress (NPC);
3. Documents adopted by the NPC and its Standing Committee regarding the MSAR;
4. Regulatory documents adopted by the NPC's Preparatory Committee for the Macao Special Administrative Region, regarding the establishment and operation of the MSAR;
5. Documents authorised by the NPC and its Standing Committee and the central government; and orders, instructions and documents issued by the central government in accordance with the Basic Law of the MSAR;
6. Documents regarding the appointment and termination of the Chief Executive, principal government officials and the Public Prosecutor-General by the central government; and
7. The Chief Executive's annual policy address.

The following announcements and documents must be published in Section Two of the *Gazette*:

1. International treaties applicable to the MSAR;
2. Agreements on judicial mutual assistance, and mutual exemption of visa requirements by the MSAR and other countries or regions with the assistance and authorisation of the central government;
3. Judicial mutual assistance agreements signed with judicial authorities in other areas or regions in mainland China;
4. Statements and announcements made by the Legislative Assembly;
5. Statements and announcements made by the Government; and
6. Other documents that are to be announced in Section Two of the *Gazette*, by law.

Since 2000, the Government Printing Bureau has posted the complete contents of Section One and Section Two of the *Gazette* on its website. However, according to the law in force at the time, the above-mentioned announcements and documents are required to be announced in the printed version of the *Gazette*; in other words, only the paper version of the *Gazette* has legal effect, while the electronic version of the *Gazette* is for information purposes only.

With the increasing popularity of the Internet, online access to statutory information has gradually become a mainstream approach. The MSAR Government amended the related legislation, so that from 2022 onwards the *Gazette* is no longer published in printed form but solely in electronic form.

As of December 31, 2023, the Government Printing Bureau had established an online database comprising documents covering approximately 186,000 laws and regulations, international laws, executive orders and announcements for public access on Accessible Legal Search platform. The Government Printing Bureau's website recorded over 5.16 million hits in 2023, averaging over 430,000 hits per month.

Information Technology Science and Technology Committee

After the establishment of the MSAR Government, the Science and Technology Commission was established under By-law No. 16/2001. In 2023, the structure and functions of the Science and Technology Commission were re-established under By-law No. 14/2023.

According to By-law No. 14/2023, the Science and Technology Commission is an advisory body to the MSAR Government, and its purpose is to advise the Government on the formulation of policies and plans to promote the development of technological innovation industries and scientific research.

The Committee is chaired by the Chief Executive and vice-chaired by the Secretary for Economy and Finance; the other members include:

- The Secretary for Social Affairs and Culture or his representative;
- The Director of the Economic and Technological Development Bureau;
- The Chairman of the Executive Committee of the Science and Technology Development Fund;
- The Chairman of the Administrative Management Committee of the Monetary Authority of Macao;
- The General Secretary of the Manpower Development Committee;
- The Director of the Pharmaceutical Administration Bureau;
- The Rector of the University of Macau;
- The Rector of the Macao Polytechnic University;
- The Rector of the Macau University of Science and Technology,
- The President of the Board of Directors of the Macau Productivity and Technology Transfer Center (CPTTM), and
- A maximum of 25 experts, scholars and community members who have excelled in the fields of science, technology, innovation or related industries.

The Economic and Technological Development Bureau is responsible for providing administrative and technical support for the Committee.

The Science and Technology Development Fund

In 2004, the MSAR Government promulgated By-law No. 14/2004 to establish the Science and

Technology Development Fund, and in 2021, the Government amended this By-law through By-law No. 1/2021.

According to By-law No. 1/2021, the Science and Technology Development Fund is a public corporate institute with administrative and financial autonomy and with its own property. It is supervised by the Secretary for Economy and Finance.

The Science and Technology Development Fund (FDCT) aims at aligning its efforts with the MSAR's technological development policies, and providing funds to various projects that promote Macao's capacities and competitiveness in scientific research and innovation. In alignment with the FDCT's objectives, the following projects are sponsored:

1. Projects which help deepen and intensify technical knowledge;
2. Projects which help improve productivity of corporations and strengthen their competitiveness;
3. Projects which are beneficial to developing the research, promotion and innovation of Macao industries;
4. Projects which help motivate transformation of research outcomes;
5. Projects which help motivate external technological cooperation;
6. Technological transformation projects that prioritise socio-economic development; and
7. Patent applications.

FDCT is responsible for the related work on science and technological rewards in Macao SAR, and can recommend that research institutes and staff in the MSAR apply for relevant rewards in response to invitations issued by mainland China or renowned science and technological reward-awarding institutions in other countries or regions. Besides, FDCT also provides funding to scientific research platforms based in Macao SAR.

Macao Post and Telecommunications Bureau

Since its foundation on 1 March 1884, the Macao Post Office – which in 2017 was renamed Macao Post and Telecommunications Bureau (CTT) – has operated as a provider of postal services, complying with international conventions. On the same day, the first Macao stamp, titled “Crown”, entered into circulation. In fact, Macao's postal service history dates back a century earlier, to 1798, when sea mail services officially began.

Many new services have been introduced since the establishment of Macao Post and Telecommunications Bureau. Alongside traditional postal services and Macao Postal Savings, established in 1917, Macao Post took over the operation of telephone and wireless telegraph services in 1927. In response to social development, some of these services were transferred to other entities or public departments. In 1981, the Companhia de Telecomunicacoes de Macau (CTM) took over the operation of telecommunications. In 2000, the Post Office's role as the supervisory body for telecommunications services was transferred to the DSRT.

On 19 December 2016, the MSAR Government issued By-law No. 29/2016 – Amendment to

the Organisation of Macao Post, to rename Macao Post as the Macao Post and Telecommunications Bureau (CTT) and merge it with DSRT, with effect from 1 January 2017.

As a bureau-level administrative entity with legal personality, the CTT enjoys autonomy over administration, finances and property, and performs the function of a credit institution. It aims to provide postal public services, and regulate, monitor, promote and coordinate any activity related to the telecommunications industry in Macao. It is under the supervision of the Secretary for Transport and Public Works.

Postal Services

In 2023, to comply with the requirements of the second edition of the EU's Import Control System (ICS2) rules, the Macao Post and Telecommunications Bureau upgraded the core information system for postal services. Additionally, the electronic customs declaration platform was optimised, to enhance data entry verification mechanisms, and a new version of the Macao Post mobile app was launched.

To promote the development of e-commerce and enhance the customer experience, the first batch of e-lockers self-service mailing machines were installed in Nova Taipa Post Office and Mong Ha Post Office. Additionally, the e-locker self-service pick-up scheme was expanded to include small inbound parcels.

In 2023, the volume of local mail decreased by two percent compared to 2022, reflecting the changes in social and economic activities and the daily lives of residents.

Regarding international mail, in 2023, the outbound international surface mail and international airmail increased by 27 percent and 19 percent, respectively, compared to 2022.

Inbound international surface mail recorded an increase of 21 percent, while inbound international airmail remained steady compared to 2022. The main destinations for outbound mail were mainland China, the Taiwan region, the United States, Hong Kong, Portugal, the United Kingdom, Canada, Singapore, Australia, and Japan. The primary sources of inbound mail were Hong Kong, mainland China, Japan, the Taiwan region, the United Kingdom, Portugal, Singapore, the United States, Jersey Island, and the Netherlands.

Regarding registered mail, in 2023 the volume of local mail increased by two percent compared to 2022. The volumes of outbound and inbound international airmail decreased by one percent and 67 percent, respectively. The volumes of outbound and inbound international surface mail decreased, by approximately 49 percent and 15 percent, respectively.

EMS and Postal Parcels

With the relaxation of pandemic prevention policies at the end of 2022 and the full resumption of travel between Macao and the rest of the world, the demand for Express Mail Service (EMS) and parcel post significantly decreased in 2023. The volumes of outbound and inbound mail decreased significantly compared to 2022, by 32 percent and 15 percent, respectively.

The main destinations of EMS items were mainland China, Hong Kong, the Taiwan region, the

United States and Japan. The main sources of EMS items were Japan, mainland China, the Taiwan region, Hong Kong and Canada. Currently, the EMS covers about 200 countries and regions.

Regarding postal parcels, in 2023 the volume of outbound and inbound surface mail decreased by 47 percent and 26 percent year-on-year, respectively; the volume of outbound and inbound airmail also decreased by 39 percent and 31 percent compared to 2022. The overall volumes of outbound and inbound postal parcels decreased by 44 percent and 29 percent, respectively, compared to 2022.

The main destinations for outbound parcels were the United States, Canada, Australia, the United Kingdom, and the Taiwan region; while the main sources of inbound parcels were Japan, the Taiwan region, the United States, Germany and Australia.

Secure Electronic Postal Services

The Secure Electronic Postal Services has developed a solid platform for electronic deliveries. Services launched include provision of Postal Registered Electronic Mail, Postal Electronic Mail, e-bill services and electronic version of Delivery Advice of EMS mail or parcels via SEPBox.

In response to the growing demand for convenient electronic services, the CTT has enhanced the registration function of the Safe Electronic Post Box. Users can authorise the CTT to register for the Safe Electronic Post Box with information on the “Macao One Account”, completing the registration process on the “Macao One Account” without having to visit a counter or information kiosk in person.

In addition, the CTT launched the “e-Advice” service, through which the electronic version of the Delivery Notice for EMS mail or parcels can be received, which helps with quickly and accurately acquiring information on mail. Currently, the Safe Electronic Post Box (SEPBox) service registration points cover organisations including the Identification Services Bureau, the Social Security Fund, Municipal Affairs Bureau, various post office branches under the Macao Post and Telecommunications Bureau and eSignTrust Registration Authority.

Philately

In 2023, the CTT issued 12 sets of stamps and one set of labels, with 12 themes. These included the Chinese Zodiac series “Lunar Year of the Rabbit” stamps and their postage labels, “Five Auspicious Animals of Ancient China”, “Lou Pan Temple”, “Explore Macao”, “Centenary of the Birth of Henrique de Senna Fernandes” and “The 70th Macau Grand Prix” stamps. In addition, the CTT released the “Annual Album 2022” and personalised stamps with the new theme “Rejoicing”, as well as prepaid postcards with the designs covering “Senado Square”, “Cathedral (Sé Cathedral)”, “Guia Fortress”, and “Na Tcha Temple”.

Regarding philatelic gifts, the CTT issued a gift set featuring a *gaiwan* (Chinese lidded bowl) and stamps to mark the Lunar Year of the Rabbit, containing a set of ceramic *gaiwan* and stamp packs with “Autumn” as the theme.

In addition, the CTT launched the “Philatelic Gifts Summer Season Sale” and “Philatelic Gifts Golden Autumn Season Sale”, to show appreciation for the continued support of philately

enthusiasts.

To commemorate and celebrate special occasions, the CTT offered 13 commemorative postmarks in 2023. Additionally, at the requests of three organisations, the CTT produced exclusive customised presentation packs for them.

In terms of regional cooperation and international relations, the CTT and China Post jointly issued a commemorative envelope with the theme “Lunar Year of the Rabbit”. Additionally, the CTT, China Post, and Hongkong Post jointly issued a booklet to mark the 10th anniversary of the Belt and Road initiative, which included stamps and souvenir sheets issued by the postal services of the three regions. Also, the CTT participated in the Thailand 2023 World Stamp Championship Exhibition to enhance the image of Macao philatelic products in the international philatelic market.

Caixa Economica Postal

Caixa Economica Postal (Postal Savings Office or CEP) is a credit institution operated by the CTT that serves as the CTT’s cashier. It also provides a wide range of bank related services, such as credit facilities, remittance services, electronic payments, exchange services and Easy Transfer system for the public.

In terms of credit facilities, CEP chiefly provides civil servants and employees of public services and private companies who sign an employee credit service agreement with guaranteed short-term credit. In 2023, CEP approved loans totalling nearly 170 million patacas.

CEP’s electronic payment platform provides an online payment service for the public. The public can also apply for or settle payments of various government services via this platform in real time. In 2023, approximately 170,000 payment transactions were settled.

Furthermore, CEP provides foreign currency exchange services for 16 currencies, including the Hong Kong Dollar, Renminbi, US Dollar, Euro and Japanese Yen.

The CEP provides the convenient Easy Transfer local interbank transfer service for citizens and companies, eliminating the traditional procedures and costs of local interbank transfers, and meeting the demand for small fund transfers. In September 2023, in line with the service upgrade of the second phase of “Easy Transfer”, the CEP also raised the transaction limits for the transfer service.

The Credit Data Platform was officially launched on 1 January 2023, with participation in the first phase limited to 30 banks in Macao (including the Macao Postal Savings), enabling their customers to apply for personal credit reports. In 2023, the platform received approximately 58,000 personal credit report applications.

eSignTrust

As the only authentication entity approved by the Government, eSignTrust has been issuing electronic signature certificates to citizens, corporations and government departments, providing them with online identity authentication services and strengthening the authentication quality of electronic documents.

In accordance with Law No. 5/2005 Electronic Documents and Digital Signatures, an electronic

document signed with electronic certification is legally binding.

In 2023, eSignTrust focused on enhancing the user experience and service quality. In June, the “eSignCloud” electronic signature system was optimised to improve service stability.

In September, in coordination with the expansion of the “Macao One Account” function by the Government, eSignTrust updated its website to allow users to make counter service appointments and handle electronic certificate services through “Macao One Account”.

In November, a new version of the electronic document signing tool (eSignPDF Lite) was made available for free download by certificate users, making it convenient for users to use eSignTrust qualified certificates for batch processing of businesses.

In December, the electronic certificate service was launched on the “Macao One Account” mobile app, enabling applications for “eSignCloud” personal accounts and related electronic certificates, further simplifying the process of applying for electronic certificates.

As at the end of December 2023, the total number of valid electronic signatures fell slightly, by around four percent year-on-year. In terms of the types of certificate services, qualified certificates recorded the greatest year-on-year decrease, of around seven percent; followed by “eSignCloud”, which declined by around one percent. The standardised certificates recorded a year-on-year increase of around four percent.

Comparing by user category, the individual and institutional users of qualified certificates decreased by 16 percent and 10 percent, respectively, largely due to the other services offered by the Government. In contrast, institutional users of “eSignCloud” recorded a year-on-year increase of about 22 percent. The increase in institutional users of “eSignCloud” and standardised certificates was mainly driven by electronic customs declaration applications from external trade operators.

In 2023, CTT continued approving internationally recognised WebTrust for Certification Authorities, and acquired the WebTrust Seal for six consecutive years.

To align with the Government’s effort to ensure that Mutual Recognition of Electronic Signature Certificates can be utilised in administration arrangements related to optimising the Guangdong-Hong Kong-Macao Greater Bay Area information technology infrastructure, the CTT attended the Guangdong-Hong Kong-Macao Electronic Signature Certificate Mutual Recognition Seminar online meeting in September, marking progress with work on mutual recognition.

In 2023, the cumulative number of “eSignCloud” signings was approximately 402,382. There were a total of 1,127 registrations and renewals for the electronic certification “eSignCloud” service (581 new applications and 546 renewals).

Telecommunications Services

Fixed-network and External Telecommunications Services

The fixed public telecommunications network and service licences held by CTM and MTEL Telecommunication Company Limited, as well as the “Interim Review of the Public Telecommunications Service Concession Agreement” held by CTM, were set to expire on 31

December 2023. Given that the Government needs time to consider the future development of fixed network infrastructure, and to ensure the stable provision of public telecommunications services, the Government decided to extend the validity of the two fixed public telecommunications network and service licences, as well as the concession contracts, until 30 September 2024.

At the end of 2023, there were 87,038 fixed-network lines in Macao, along with 482 public payphones on the Macao peninsula and on the two islands. These public phones can also be used to make international direct calls (IDD). Currently, callers in Macao can make IDD calls to 246 countries and regions.

Public Mobile Telecommunications Services

At the end of 2023, there were four mobile telecommunications network operators in Macao, namely the Companhia de Telecomunicações de Macau (CTM), China Telecom (Macao) Company Limited, Hutchison Telephone (Macao) Company Limited and SmarTone Mobile Communications (Macao) Limited, offering 3G and 4G telecommunications services. The CTM and China Telecom (Macao) Co Ltd also provide 5G services.

Currently, mobile services in Macao are 4G- and 5G-based, with the number of 3G users gradually declining. In July 2022, the MSAR Government extended the 3G licences of the four mobile operators for two years, until 4 June 2025, and the 4G licences for five years, until 23 June 2028.

The Government issued 5G licences to CTM and China Telecom (Macao) Co Ltd in November 2022, with a term of eight years effective from 8 November 2022. The licensed companies launched their services in mid-November 2022. By the end of 2023, the outdoor coverage rate of the 5G network in Macao had exceeded 90 percent.

At the end of 2023, there were 1,374,126 mobile telecommunication users, with the per capita mobile penetration rate at 202 percent (Note 1).

Mobile Communication Service Information		
Year	No. of mobile phone users	No. of rechargeable mobile phone cards
2020	832,949	788,268
2021	880,785	393,962
2022	925,809	287,407
2023	1,000,449	373,677

Internet and Broadband Services

At the end of 2023, there were 211,749 broadband subscribers, approximately two percent more

than in 2022. Among them, 186,016 were residential broadband services subscribers, representing approximately 92.8 percent of all households (Note 2).

Moreover, the urban wireless broadband network project commenced in 2009, and began providing services to residents and tourists in September 2010. As at the end of 2023, there were 181 WiFi Go service spots, and over 327 million successful connections had been recorded.

In 2017, the CTT allowed licensed internet service providers (ISPs) to install outdoor Wi-Fi hotspots and provide services to the public. To further expand the coverage of free Wi-Fi in Macao, the “FreeWiFi.MO” plan was launched in December that year, aiming to encourage institutions in Macao to provide free Wi-Fi services to residents and tourists. The plan gained support and participation from organisations, which include Internet service providers, government departments, hotels, hospitals, shopping malls, banks, on-call taxis, public utilities and the dining industry. At the end of 2023, there were 563 locations providing the service.

After Law No. 13/2019 – the Cybersecurity Law was promulgated on 22 December 2019, the CTT, as a designated cybersecurity monitoring entity, has the responsibility of monitoring the private operators of critical infrastructure in four categories: regulating audio-visual broadcasting, operating fixed or mobile telecommunication networks, and providing Internet connection services, wholly owned public corporations, and non-profit public legal bodies for managing activities limited to scientific and technological areas, and continues to supervise effective implementation of the real name registration and preservation of records of changes of network addresses.

Television Services

Since April 2014, Macau Basic Television Channels Limited has been assisting Macao residents in receiving basic television channels in accordance with the Concession Contract for the Support Service in Receiving Basic Television Channels and its additional contracts. The company has also been conducting cable enhancement works in various districts, managing and dismantling aerial cables along public roads. By 2023, Macau Basic Television Channels Limited had largely completed the historic task of replacing overhead cables with underground fibre-optic networks for television signal transmissions. Consequently, the Government has decided to hand over the work of Macau Basic Television Channels Limited to TDM - Teledifusão de Macau, S.A., while terminating the Concession Contract for the Support Service in Receiving Basic Television Channels. On 19 December 2023, Macau Basic Television Channels Limited was merged into TDM, and a new amended Concession Contract for the Support Service in Receiving Basic Television Channels was announced. TDM will continue to provide support services for residents to receive basic television channels.

Regarding terrestrial pay television services, to achieve the policy objective of liberalising the market for television services and to support the future development of convergence, in April 2019, the Government endorsed the renewal of the non-franchised contract for Macau Cable TV for five years.

The Government promulgated a new executive order in July 2014, exempting satellite television receivers with diameters of less than three meters from approval by the Government, provided that the receivers are used for receiving television channels for private viewing. This enables the public

to conveniently access television programmes via satellite signals.

Registration and Management of Internet Domain Names

Following the expiry of the term of the University of Macau’s appointment to manage and register the domain “.mo” for the Macao SAR, the Government launched the new Macao Network Information Centre in March 2011. In 2014, the Macao Network Information Centre introduced services for Chinese and Portuguese domain names for the Internet country code “.mo” and supported electronic payment, optimisation of the application procedures and amendment of domain names, to provide more diverse, better quality domain name services. The DSRT introduced IPv6 and “.mo” domain name services in 2015 and 2018, respectively, further advancing the development of domain name services in Macao.

IPv6 Network Research Laboratory

To introduce IPv6 and its related setup techniques to the industry and personnel in the relevant fields, and to assure the industry of the application of IPv6, the former DSRT worked with the Macau Polytechnic University in setting up the IPv6 Network Research Laboratory. This aimed to demonstrate the application and connection of IPv6, and to conduct related research and development. Since its commencement in April 2013, the Macau Polytechnic University has utilised the laboratory for scientific research and teaching activities. The CTT also continued working with Macau Polytechnic University in organising IPv6 promotional events.

Development of Terrestrial Digital Broadcasting

In line with global development trends, TDM has fully adopted digital broadcasting since 30 June 2023, and provides 11 terrestrial digital television broadcasting channels.

Wireless Communication Operations and Frequency Plan in Coordination with Neighbouring Regions

After signing the Mainland China and Macao Frequency Coordination Agreement for Terrestrial, Mobile/Fixed Broadcasting (Audio and Television) in 2002, mainland China and Macao have been maintaining strong links in the development of wireless communication services.

In conjunction with mobile network operators in Zhuhai and Macao, the CTT and the radio authority of Zhuhai regularly tests for cross-boundary overspill of signals. In 2023, the CTT organised Macao-operated independent surveys, to oversee and continue improving the cross-boundary overspill signal, in accordance with the agreement.

Note 1: The calculation was based on a figure of 681,300 from the 2023 population census in the third quarter of 2022, as reported by the Statistics and Census Service.

Note 2: According to the results of the 2023 population census published by the Statistics and Census Service, there were 204,400 households at the end of 2023.

中國載人航天專場報告會

Conferência sobre missões espaciais tripuladas da China



**Visit to Macao by the China Manned
Space Programme Delegation**





The China Manned Space Programme delegation visits Macao from 1 December to 3 December, to introduce the construction and development of China's manned space programme to the Macao scientific and technology sector, and school teachers and students, and share their experience in spaceflight. The delegation also visits the Macao Science Center, to tour the Planetarium, the International Laboratory for Popularising the Science of BeiDou Navigation Satellite System, the Data Science Gallery, the Spirit of Chinese Scientists Gallery, and the science exhibition "Chasing Dreams in the Sky and Exploring the Deep Sea - China Aerospace and Navigation Technology Gathering in Macao". Through the visits and interactive exchanges, the delegation provides Macao residents with a better understanding of China's manned space programme, and inspires younger generations to enthusiastically explore the universe through science.