

## **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 (Macau Broadcasting Company, TDM) began providing a public broadcasting service in February 1988. Digital broadcasting commenced in 2008. Currently, both analogue broadcasting and digital broadcasting are available. The 12 digital channels include the two round-the-clock channels (Chinese and Portuguese), sports, information, high definition (HD), TDM Entertainment, CCTV-13, CCTV-1, CGTN, CGTN Documentary, Fujian TV Station Haixia Satellite Channel and Hunan TV World.

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. The Radio Macau features two channels: one in Chinese, the other in Portuguese.

Macao Cable TV has been broadcasting since July 2000, and offers 95 channels (72 basic channels, 16 premium channels, five test channels, and two 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 2019, 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* (Macau Gazette), *Imparcial* (The Impartial), and *Correio de Macau* (Macau Post). Macao currently has three Portuguese dailies. There are one Portuguese-Chinese and one Portuguese-English 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, China News Service (CNS) and Lusa-Portuguese News Agency have branches or representative offices in Macao. People's Daily has a branch 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 Macau Sports Press Association, the Macau Portuguese and English Press Association and the Macau 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 assisting with 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. By the end of 2022, the GCS set up a Douyin account, achieving positive results. The GCS publishes the *Macao Yearbook* and *Macao Magazine* in Chinese, English and Portuguese, and launches websites and mobile applications, allowing readers to conveniently browse related information.

As at 31 December 2022, the GCS Facebook Page had 61,000 followers. A total of 7,400 posts was published in 2022, with over 120 million views.

In 2022, the GCS published 3,238 posts on its WeChat subscription account “Macao Government Information”, which received more than 4.85 million views and were shared about 235,000 times. The number of followers increased from 50,000 in 2021 to over 80,000 by the end of 2022.

The GCS YouTube channel has categories such as news clips, news features, government departmental features and promotional videos. By the end of 2022, a total of 19,000 subscribers was recorded, representing an over 20 percent increase in subscribers from 2021, with a total of 1.84 million views.

The GCS also liaised with other government departments to collect the latest informational videos and regularly upload them to the GCS’s YouTube channel. In 2022, the GCS assisted 17 departments with uploading about 403 videos.

At the beginning of 2020, the GCS launched a “MSARGCS - Government News Channel” and a “Novel Coronavirus Channel” on Telegram, in Chinese, Portuguese and English. As of 31 December 2022, the former had a total of 6,700 subscribers and the latter about 6,900 subscribers.

By the end of 2022, the GCS’s Instagram account had 8,000 followers, with 576 posts that attracted a total of 31,000 views.

In 2022, the GCS’s official WeChat account in mainland China – *Macao Gov Release*, official Weibo account *Macao Gov Release*, and Toutiao account *Step Closer to Macao* recorded notable growth in the numbers of posts, total numbers of viewers, numbers of subscribers and reading rates.

Among the above-mentioned accounts, *Macao Gov Release* published a total of 3,256 posts in 2022. The number of subscribers increased from around 108,000 to 250,000, with a growth rate of around 130 percent.

In 2022, the official Weibo account *Macao Gov Release* published a total of 3,038 posts; and the number of subscribers increased from 127,000 to 189,000. The official Toutiao account *Step*

*Closer to Macao* published a total of 2,942 posts in 2022; and the number of subscribers increased from 30,000 to around 55,000, with a growth rate of over 80 percent.

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 Radio the Greater Bay from the Hong Kong-Macao-Taiwan Programme Centre of the China Media Group on a long-term basis, including through providing assistance with organising editorial reports involving the broadcast team and the new media team, as well as the collective production of a new media series, *Visit Macao*, with a total of 40 reports published throughout the year.

In addition, the new media team published 15 posts based on various topics and appearing at appropriate times, including: intangible cultural heritage, a visit to the Intensive Cooperation Zone, interviews with officials, and "Macao is my home". The articles were re-posted and published on various platforms of the Central Government and the Greater Bay Area, with a cumulative total of 95.35 million views and 156,000 discussions across the Internet.

Furthermore, the GCS continue cooperating with the People's Daily Online in the production of *Micro Macao* video series. A total of over 64 million hits were recorded for the four-episode series.

In 2022, the GCS followed up regarding Macao's section of the national thematic exhibition "Moving Forward to a New Era".

## 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 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.

In 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. The revamped website was launched in December 2022.

In 2022, the GCS drafted, released and assisted various departments in publishing a total of 28,580 news items (press releases, press invitations, important notices, and speeches) in Chinese, Portuguese and English, as well as 555 video clips and 1,095 sets of photographs. In all, 1,088 press releases were written, 1,092 press photos were taken, 136 news videos were produced, and 210 press conferences were live streamed 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. By the end of December 2022, more than 79,000 users had downloaded and used the app.

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.

## **Dissemination Updates Regarding the Pandemic**

During the "6.18" pandemic outbreak, which began on 18 June, Macao entered a state of immediate prevention and activated the civil protection mechanism. As a member of the civil protection authorities, the GCS immediately sent officers to stand by at the Civil Protection Operations Centre 24 hours a day; and provided information for the public, along with early warning information and support for the press. Through its website and various new media platforms, the GCS published press releases for various departments and press releases regarding the numbers of people waiting at each nucleic acid test station every hour, as well as images illustrating the citywide nucleic acid tests and departments' concerted efforts to combat the pandemic, along with livestreams of press conferences on civil protection. Hence, the GCS kept the public informed regarding the latest information on the pandemic and the anti-pandemic work of various government departments.

From 19 June to 2 August, totals of 4,551 press releases in Chinese, 3,569 in Portuguese and 3,130 in English were published on GCS's website; 902 WeChat posts were published; 164 infographics were published – of which 61 were in Chinese, 38 in Portuguese, 38 in English, nine in Vietnamese, nine in Burmese and nine in Indonesian; and 36 videos were produced and published, of which 21 were in Chinese, seven in Portuguese and four in English.

During the immediate prevention status, all information was simultaneously published via the information dissemination system of the GCS to the Government portal, GCS's public website, the mobile news app, the GovInfo Hub website that is specially for the media, the GCS Facebook page, the Novel Coronavirus Response and Coordination Centre's Facebook page and the "Typhoon and Civil Protection Information" Facebook page, SMS, Telegram, and the GCS official WeChat account and YouTube channel.

All press conferences of the Novel Coronavirus Response and Coordination Centre were live streamed on the Facebook pages and YouTube channels of the GCS and the Novel Coronavirus Response and Coordination Centre, with a total of 101 sessions live streamed during the year. The GCS published the highlights of these press conferences in the form of "flash news" in real time, with a total of 1,427 "flash news" items released throughout the year.

Also, the GCS produced easy-to-understand infographics covering the key points of the press conferences in Chinese, Portuguese and English on the same day, as well as in Indonesian, Burmese, Vietnamese and other languages for the respective communities based on related content. The infographics were also published on various new media platforms of the GCS, to enable residents and travellers to effectively keep abreast of the latest information on the pandemic.

## 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 2022, seven publications were newly registered with the GCS: three weeklies, one monthly, two quarterlies and one annual publications. Meanwhile, 15 publications cancelled their registration during the year, including three weeklies, two monthlies, three bi-monthlies, five quarterlies, and two biannuals.

## 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.

In 2022, *Macao Magazine* produced a series of reports mainly focusing on the implementation of policies, fully leveraging its role as an official publication in promoting the MSAR, actively assisting the Government with implementing its work, and 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](http://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 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. To strengthen the accuracy and integrity of the electronic version of the Gazette, the Government Printing Bureau launched an electronic authentication version of the Gazette in November 2015.

With the increasing popularity of the Internet, online access to statutory information has gradually become a mainstream approach. Having considered cost-effectiveness and environmental protection factors, the MSAR Government has amended the related legislation. From 2022 onwards, the statutory publication method of the Gazette has been changed from printed to electronic form, thereby achieving a paperless Gazette.

As at the end of December 2022, the Government Printing Bureau had established an online database comprising documents covering approximately 180,000 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 5.25 million hits in 2022, with an average of over 438,000 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 Secretary for Economic and Technological Development;
- 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 Supervision and 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 Council 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.

The MSAR Government issued By-law No. 29/2016 – Amendment to Regulation of Organisation of Postal Services, 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**

As a result of the COVID-19 pandemic in 2022, local mail traffic was 14 percent lower than in 2021.

Regarding international mail, due to the impact of the pandemic on the routes for outbound mails, the outbound international surface mail and international airmail recorded a six percent drop and a 16 percent drop, respectively, compared to 2021.

Inbound international surface mail and inbound international airmail also recorded decreases of 10 percent and 31 percent, respectively. The main destinations for outbound mail were mainland China, Hong Kong, the Taiwan region, Portugal, the United States, the United Kingdom, Singapore and Malaysia. The main sources of inbound mails were mainland China, Hong Kong, the Taiwan region, Portugal, Japan, the United Kingdom, Singapore and Jersey Island.

Regarding registered mail, in 2022 the volume of local mail was nine percent lower than in 2021. The volumes of outbound and inbound international airmail decreased by six percent and increased by 142 percent, respectively. The volumes of outbound and inbound international surface mail decreased, by approximately one percent and 31 percent, respectively.

## **EMS and Postal Parcels**

As a result of the suspension of mail deliveries due to the Covid-19 outbreak beginning on 18 June, the volumes of outbound and inbound mail through the Express Mail Service (EMS) in 2022 decreased by 19.92 percent and 7.82 percent, respectively, as compared to 2021.

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

Regarding postal parcels, in 2022 the volume of outbound surface mail decreased by 24.99 percent and the volume of inbound mail increased by about 0.73 percent; the volume of outbound airmail increased significantly, by 133.51 percent, and the volume of inbound airmail decreased slightly, by 0.26 percent. The overall volumes of outbound and inbound postal parcels increased by 4.56 percent and 0.07 percent, respectively, compared to 2021.

As worldwide airmail parcel services gradually resumed in 2022, there was a noticeable increase in outbound volume. The main destinations for outbound parcels were the United States, mainland China, Canada, the Taiwan region and the United Kingdom, while the main sources of inbound parcels were the Taiwan region, Japan, the United States, Germany and Australia.

## **Assisting with the “e-Consumption Benefit Plan”**

In accordance with the third round of the “e-Consumption Benefit Plan” and the “Living Allowance

Plan” launched by the MSAR Government, the general post office under CTT together with 11 post office branches set up service spots to provide residents with a “Consumption Cards” self-service top-up service.

## **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, eDirect Mail, e-bill services and electronic version of Delivery Advice of EMS mail or parcels via SEPBox.

The CTT enhanced the registration function of the Safe Electronic Post Box in 2022. 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 covers organisations including the Directorate for Identification Services, the Financial Services Bureau, the Social Security Fund, various post office branches under the Macao Post and Telecommunications Bureau and eSignTrust Registration Authority.

## **Philately**

In 2022, the CTT issued stamps with 16 themes, including the Lunar Year of the Tiger series and its label stamp, the Feast of Saint John, Macanese Gastronomy, Historical School Buildings in Macao and the 400th Anniversary of the Chapel of Our Lady of Penha. The CTT also issued stamps and a thematic pack on the Olympic Winter Games Beijing 2022.

Regarding philatelic gifts, the CTT issued a gift set featuring a “gaiwan” and stamps on the “Lunar Year of the Tiger”, containing a set of ceramic “gaiwan” and stamp packs with the theme of “Summer”. The CTT has continued to innovate in the design of its philatelic products. In addition to the regular philatelic products, the “Eighteen Arhats” also included a gift box containing a set of long scroll stamps, the first of its kind to be introduced by the CTT. The set of 18 stamps was presented in a long horizontal roll measuring 570mm x 120mm, which is of great artistic and collectible value.

The CTT is committed to providing a wide range of philatelic products and services. In addition to customised stamp folios, the CTT also offers an exclusive gift ordering service with customised framed stamp decorations and stamp paperweights among the philatelic gifts.

To commemorate and celebrate special occasions, the CTT offered nine commemorative postmarks in 2022.

A DIY postcard-making machine has been set up at the Hong Kong-Zhuhai-Macao Bridge Self-Service Postal Centre, where citizens and visitors can create personalised postcards and instantly

send them with stamps to places all over the world.

## **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 2022, CEP approved loans with 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 2022, approximately 350,000 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.

From December 2021 onwards, the CEP provides the convenient Easy Transfer local interbank transfer service for citizens and companies, to meet the demand for small fund transfers.

The establishment of the Credit Data Platform was completed in 2022, with participation was limited to banks in Macao in the first phase, in order to achieve the mutual sharing of customer credit data among banks in Macao and reduce credit risk.

## **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 2022, eSignTrust launched the PUK card with a secure electronic signature generator (smart card) in September, allowing users to use a secure and convenient unlocking function. In October, a web-based electronic signature verification tool (beta version) for PDF documents was launched, enabling the public to check the validity of electronic signatures in PDF documents, thus helping to determine the validity and trustworthiness of electronic signatures.

As at the end of December, the total number of valid electronic signatures fell slightly by around 8 percent year-on-year. In terms of the types of certificate services, "eSignCloud" recorded the greatest year-on-year decrease, of around 17 percent; followed by qualified certificates, which fell slightly, by around four percent. The standardised certificates recorded a year-on-year increase of around eight percent, mainly driven by electronic customs declaration applications from external

trade operators, while the number of individual users of “eSignCloud” recorded a significant decrease year-on-year, which was mainly due to the other services offered by the Government.

In 2022, CTT continued approving internationally recognised WebTrust for Certification Authorities, and acquired the WebTrust Seal for five 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-Macau Greater Bay Area information technology infrastructure, the “Hong Kong-Macau Recommendations on the Framework for Mutual Recognition of Electronic Signature Certificates” was signed with effect from March, marking progress with the work on mutual recognition of electronic certificates.

## **Telecommunications Services**

### **Fixed-network and External Telecommunications Services**

At the end of 2022, there were two fixed public telecommunication network operators in Macao, namely the Companhia de Telecomunicações de Macau and MTel Telecommunication Company. Both operators provide local and international direct line services, while fixed-network telecommunication services are provided by the CTM.

At the end of 2022, there were 92,382 fixed-network lines in Macao, along with 493 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 2022, 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-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 commenced an open tender for the issuance of 5G licences in June 2022, and issued 5G licences to the CTM and China Telecom (Macao) Co Ltd in November, with a term of eight years effective from 8 November 2022. The licensed companies launched their services in mid-November 2022.

At the end of 2022, there were 1,213,216 mobile telecommunication users, with the per capita mobile penetration rate at 181 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

## Internet and Broadband Services

At the end of 2022, there were 208,416 registered broadband subscribers, 1.4 percent more than in 2021. Among them, 186,016 were residential broadband services subscribers, representing approximately 92 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 2022, there were 190 WiFi Go service spots, and over 139 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 beverage industry. At the end of 2022, there were 577 locations providing the service.

Since 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 with receiving basic television channels. Meanwhile, the company carried out cable enhancement work across various districts, while dismantling aerial cables along public roads. The company’s support service was renewed for two years from 1 April 2022. After the company completed the replacement of aerial cables with underground cables along public roads in 2021, it largely finished dismantling



aerial cables in residential buildings in 2022, and continued follow up work regarding the remaining individual terrestrial cables in the city. The company conducts regular inspections to prevent the addition of new overhead television signal cables. Currently, underground cable networks cover over 95 percent of residential buildings, enabling residents to receive basic television channel signals.

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 Institute 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. The laboratory commenced operations in April 2013. The CTT also continued working with Macau Polytechnic University in organising IPv6 promotional events.

## **Development of Terrestrial Digital Broadcasting**

Following the global trend of terrestrial digital broadcasting, the number of terrestrial digital broadcasting channels provided by Teledifusao de Macau (Macao Broadcasting Company, TDM) increased to 13.

## **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. Despite the influence of the Covid-19 pandemic in 2022, 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 671,900 from the 2022 population census in the third quarter of 2022, as reported by the Statistics and Census Service.*

*Note 2: According to the results of the 2021 population census published by the Statistics and Census Service, there were 202,700 households at the end of 2021.*





**Digital cultural tour**







The MSAR Government rolled out a series of technology + tourism programmes in 2022, including the “Arraial na Ervanários”, “Arraial em Coloane” and “Arraial na Taipa” AR interactive experiences, using AR to help people explore various characteristics of neighbourhoods, enhance sightseeing experiences, and stay for longer. The “soliciting – experiencing – checking-in – spending” model integrated beautification of community scenic spots, consumption benefits, games and awards. Through being implemented both online and offline, it created talking-point destinations, and encouraged both residents and tourists to immerse themselves in sightseeing and spending across various Macao districts, adding momentum to the recovery of the community economy.