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Macao SAR Electronic Governance General Plan 2015-2019



Macao SAR

Electronic Governance General Plan

2015-2019

Public Administration and Civil Services Bureau

October 2015

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1. Introduction

The fourth-term Chief Executive mentioned in his election platform that the Macao SAR government will “in the next 5 years, strictly adhere to the governance philosophy of ‘people first’ and ‘scientific decision-making’, building better staff and simplifying administrative procedures, continuing to optimize public services and enhance government efficiency, and raising the effectiveness of execution and credibility.” Furthermore, “position of development centering around One Centre and One Platform” has been determined, speeding up the process of development of a world centre for tourism and leisure.

Meanwhile, it was also mentioned that “reforming the governance system, enhancing the communication channels and exchange mechanism between the government and civic associations and citizens are not only the necessary conditions for the socio-economic development of Macao but also one of the main prerequisites to good governance.” For these reasons, key objectives and tasks of “developing a multi-level communication channel and exchange mechanism, facilitating public participation,” “building better staff, streamlining unnecessary administrative steps, integrating procedures with higher homogeneity,” “improving cross-agency collaboration mechanism, enhancing communication and collaboration between

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agencies, thus enhancing administrative efficiency” and “continuously optimizing civil service system” are set.

The above key objectives and tasks not only run through various policy initiatives, achieving the objectives and completing the tasks require the support of electronic governance; hence, it is necessary to formulate a general plan for the development of electronic governance in order to provide full support of the tasks.

After a number of years in electronic governance development, works have been done in six areas including regulations and systems, infrastructure, information security, digitization of business procedures and internal management, public e-services, government websites, and e-participation and a certain degree of success have been achieved. However, due to the rapid development of information technology, government decision-makers, government agencies, citizens, tourists, and enterprises have increased their expectations on electronic governance. Therefore, to enhance administrative efficiency and quality of service, satisfy the demands of various interested parties, it is necessary for the Macao SAR to accelerate the development of electronic governance, especially in the areas of digitization of procedures, services, and communication between the public and the government.

As seen from the electronic governance development of other countries and based on the analysis of research institutes, one-stop service, smart city, government portal and open data, information

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security and crisis management, cloud computing and cloud services, social media, big data, etc. have become trends in electronic governance development.

To facilitate the development of electronic governance of Macao SAR, in response to governance and the demands of the government both internally and externally, after reviewing the electronic governance development of the SAR, analyzing the trends in electronic governance development, using the experience of the electronic governance development of other countries, Public Administration and Civil Service Bureau (SAFP) drafted the “Macao SAR Electronic Governance General Plan 2015-2019 Consultation Document”, and a one-month internal consultation took place between 30th June and 31st July 2015. After analyzing the suggestions, comments, together with the five-year plans of the government agencies, using the original consultation document as a blueprint and making the necessary adjustments according to the consultation, SAFP completed the “Macao SAR Electronic Governance General Plan 2015-2019” (hereafter referred to as “General Plan”) which will be used as the guiding principles for the electronic governance development of the SAR.

The General Plan comprises the objectives, principles, and strategies, as well as the six major tasks for electronic governance development of the Macao SAR for the next five years. To meet the demands of governance, the General Plan is service and

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collaboration-oriented, that is, to develop services to fulfill the needs of various interested parties and at the same time, facilitate the collaboration between government agencies, service providers, and the users. Furthermore, a coordination and collaboration mechanism will ensure that all the projects are properly followed up and implemented by joint efforts of the government agencies, and an assessment mechanism will facilitate the continuous improvement of the various projects.

Each government agency will, based on their needs, optimize their business procedures, simplify their administrative formalities, and develop and provide more public e-services. The General Plan will, on the macro front, strategically guide the development of electronic governance, provide to government agencies common software modules, common platform systems, hardware infrastructure, services and supporting legal systems needed in the overall development of electronic governance. The optimization and digitization of cross-agency business systems and processes will be facilitated. Training, publicity, and promotion related to electronic governance will be strengthened to further guide government agencies in intensifying their own electronic governance development. This way, through the effective operation of the Coordination and Collaboration Mechanism and the Assessment Mechanism, the General Plan and the electronic governance development plans of the government agencies will complement each other, thus supporting the full-scale

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development of electronic governance as required in the overall policy direction.

During the implementation of the various projects in the General Plan, suggestions from various interested parties, especially citizens, through a dedicated website and other effective channels will be collected. Based on the suggestions received, the projects and the corresponding timetables in the General Plan will be adjusted based upon the latest needs of the interested parties.

2. Objectives, Principles, and Implementation

Strategies

2.1. Objectives and Principles

Drawing on the experiences of other countries or regions, the development of electronic governance is found to be closely tight to the different stages of public administration reform as well as overall governance plan of that country or region. For this reason, after reviewing the electronic governance development of the Macao SAR and the electronic governance development trends of other countries, together with the analysis of the fourth-term Chief Executive's Policy Address for the Fiscal Year 2015, we established the following objectives and principles for the Macao SAR electronic governance general plan for the next five years: using better staff and streamlined administration to realize good governance, supporting the development orientation of "One Centre" and "One Platform," fulfilling the needs of all parties, maintaining a balanced development between services and information security, and consolidation and collaboration of common resources. These objectives and principles will form the basis of refining the General Plan's various projects. They will also serve as the direction and guidelines for the agencies as they implement their own electronic governance development plans.

2.1.1. Using Better Staff and Streamlined Administration to Realize Good Governance

The Fourth-term Chief Executive mentioned in the “Good Governance” chapter of his election platform that the Macao SAR government will “in the next 5 years, strictly adhere to the policy vision of ‘people first’ and ‘scientific decision-making’, build better staff and simplify administrative procedures, continue to optimize public services and enhance government efficiency, and raise the execution capability and credibility of the government.” Major tasks include “developing a multi-level communication channel and exchange mechanism, facilitate public participation,” “building better staff, streamlining unnecessary administrative steps, and integrating procedures with higher homogeneity”, “improving cross-agency collaboration mechanism, enhancing communication and collaboration between agencies, thus raising administrative efficiency” and “continuously optimizing the civil service system,” etc.

“Better staff and streamlined administration” consists of two levels of work: “building better staff” and “streamlining administrative procedures.” “Streamlining administrative procedures” refers to reorganizing administrative structures, optimizing and digitizing procedures, optimizing cross-agency collaboration, and providing more public e-services in order to increase administrative efficiency. “Building better staff,” in term of electronic governance,

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aims to increase the electronic governance awareness and participation of directors, chiefs, and civil servants of various levels. With an emphasis on collaboration, all government agencies will work together in simplifying the administrative procedures across government. In addition, a multi-level communication channel and exchange mechanism will be developed, consultation channels will be increased and the transparency and openness of government data will be facilitated through electronic means, allowing citizens to obtain and make use of government data, thus promoting public participation and realizing good governance.

On this basis, when the Macao SAR implements the General Plan or when government agencies carry out their own electronic governance plans, the Chief Executive's "better staff and streamlined administration" strategy should be firmly adopted, especially when facilitating the digitization of internal management and public services, the requirements of the relevant works above should be met, and administrative procedures should be streamlined according to available resources and social development needs, and digitization should be done based on the optimization of administrative procedures. Government agencies should develop electronic governance to satisfy the ever-changing demands, and support the government in achieving the goal of realizing "good governance" through various measures.

2.1.2. Supporting the Development Orientation of “One Centre” and “One Platform”

Policy Address for the Fiscal Year 2015 clearly states that, based on community input, the SAR government has already submitted to the Central Government the Macao chapter recommendation of the Thirteenth Five-year Plan. The formulation and execution of the plan will speed up the process of developing Macao into a world centre for tourism and leisure, as well as an economic and trade co-operation platform for China and Portuguese-speaking countries, realizing moderate diversification of economic development, strengthening competitiveness so as to achieve sustainable growth, and continuously improving people's livelihood. The Committee for the Development of a World Tourism and Leisure Centre, chaired by the Chief Executive, will be formed in the second half of 2015. Its main task is to formulate the World Tourism and Leisure Centre Development Plan based on the foundations of previous works. The plan will cover areas in making the city favourable for living, working, transport, travel, and leisure. With the preparation of the population policy, which is expected to be completed shortly, the plan will feature top-level decision, overall relevance, and operability. In the future, annual policy initiatives of various areas should adhere strictly to the goals of the five-year plan and the effectiveness of the implementation of the initiatives will be linked to the performance management system.

Based on the above, the facilitation of the development of “One Centre” and “One Platform” should be an objective of the general plan for electronic governance. In the meantime, through the effective operation of the coordination and collaboration mechanism, government agencies should continuously review their own functional areas that are related to the five characteristics of “world centre for tourism and leisure”: favourable for living, work, transport, travel, and leisure, to implement their own electronic governance development plan in support of the region’s overall electronic governance plan and their own needs. In addition, after the confirmation of Five-year Plan for the Development of the World Centre of Tourism and Leisure, necessary adjustments to the General Plan and the electronic governance development plans of the agencies will be made.

2.1.3. Fulfilling the Needs of Various Parties

In addition to the “building ‘better staff and streamlined administration’ to realize good governance” and “Supporting the development orientation of ‘one centre’ and ‘one platform’”, when facilitating the digitization of internal management and public services, we need to fulfill the needs of various parties in order to receive support from all parties, and ensure sustainable development.

Parties related to Macao’s electronic governance development consist of citizens, businesses, civic associations, civil servants,

government agencies, and policy makers. In the daily interactions between the parties, whether it is between policy makers and civil servants, among government agencies, or between government agencies and citizens, electronic governance applications are involved. Therefore, when considering user requirements of electronic governance, both individual and common needs of the parties should be considered. And when designing e-services, in order for the parties, especially for the citizens, to conveniently obtain quality public services, the “people first” principle should be observed and the characteristics of various delivery methods such as face-to-face, telephone, desktop computer, kiosk, mobile applications, and social media should be considered in order to provide diversified channels for service delivery. In addition, when implementing e-services, special attention must be paid to the analysis of cost-effectiveness, and to accurately estimate the number of users in order not to over-spend due to over-estimation. Also, effective consultation and communication mechanisms should be established in order to continuously collect the opinions of various parties, professionals, and the general public so that the General Plan can be timely adjusted and optimized to fulfill the latest demands of the various parties.

2.1.4. Maintaining a Balanced Development between Services and Information Security

Information security and crisis management strategies provide the basic guarantees for safe operations of electronic governance of the SAR. Therefore, when considering the development of new e-services, guaranteeing information security should be the basic requirement. Likewise, information security should apply suitable measures to fully support the development plan of the services. For example, when developing infrastructure for electronic governance, enough flexibility and scalability should be provided in order for electronic governance to operate in an environment where both the requirements of the service and safety criteria are met.

Even so, allocation of resources for information security should observe the moderate principle, meaning, it should match the scale of the actual service so that both information security and service can have a balanced and synchronized development, reflecting there is no excessive allocation of resources for information security, while providing sufficient protection for the services.

2.1.5. Consolidation and Collaboration of Common Resources

After years of development, electronic governance of the Macao SAR has laid down a solid foundation in the areas of infrastructure, application platforms, and data. However, since we are entering a new phase of electronic governance development, government agencies will be doing a tremendous amount of development works. Therefore, government agencies, when they develop their own electronic

governance, should give sufficient consideration to consolidate and make use of the existing resources of the SAR government. For those projects that have to start from scratch, they should consider developing common modules based on the commonalities to form a Government Common Application Modules Library that can be shared among all government agencies. On the one hand, efficiency will be increased, repeated investment and development will be avoided; and on the other, it provides a means to effectively utilize the overall IT human resources of the government, and creates synergy with interoperability and mutual manageability between government agencies, thus accelerating the electronic governance development of the SAR.

2.2. Implementation Strategies

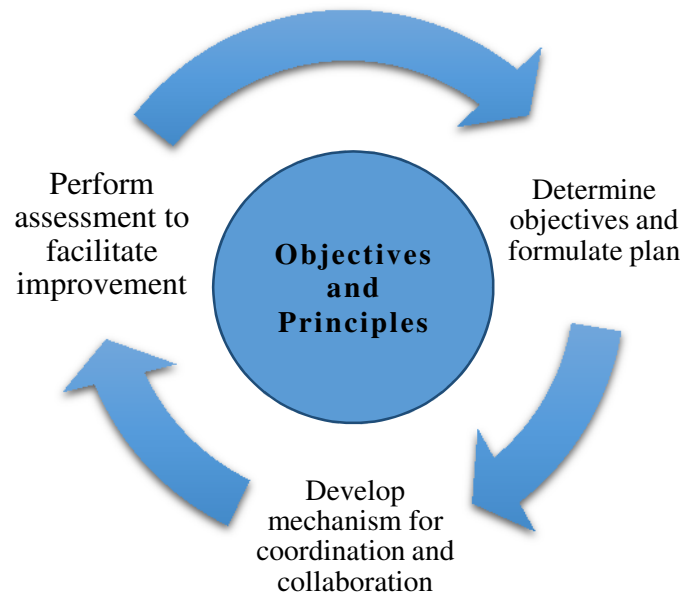
Simply put, a policy usually goes through three stages: formulation, implementation, and assessment. It is a repeating process, and it continuously facilitates the implementation and improvement of the policies, enabling the policies to achieve the expected results and satisfying the needs of the parties related to the policy.

Electronic governance policy of the SAR is no exception. After determining the objectives and principles, a detailed plan of work needs to be defined. Together with the corresponding coordination and collaboration mechanism and appropriate assessment, it will guide the government agencies to develop their work in accordance

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with their development plans. It will also facilitate collaboration between agencies, continuously improve and optimize the various tasks of the General Plan, thus producing expected results.

Illustration:



2.2.1. Determine Objectives and Formulate Plan

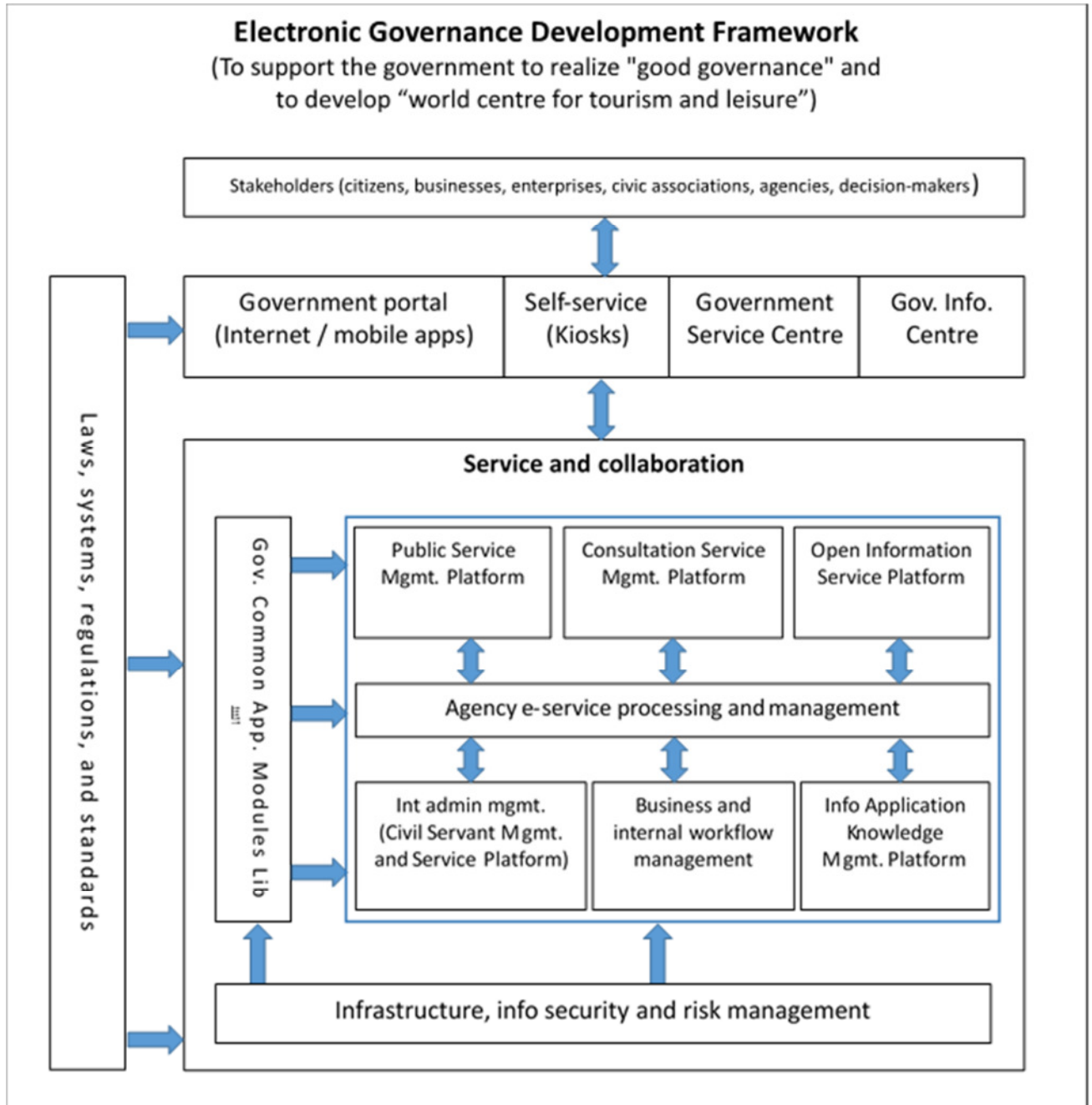
Through consultation, a consensus is reached and the objectives and principles of the General Plan are determined. The plan will focus on consolidating and collaborating common resources, facilitating the standardization and digitization of internal administrative procedures, raising cross-agency administrative efficiency, realizing the

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optimization of business procedures and digitalization of public services, enhancing the government portal, adding e-service delivery channels in order to achieve the objectives set in the General Plan and to benefit all interested parties during the process of implementing the General Plan.

For this reason, to present a clear picture of the general plan of the development of electronic governance of the SAR, the following Electronic Governance Development Framework diagram is used to illustrate the relationship between various tasks in the General Plan.

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As seen from the diagram, the Electronic Governance Development Frame aims “to support the government to realize ‘good governance’ and to develop a ‘world centre for tourism and leisure’,” with developing “service and collaboration” as its main axis, and uses “laws, systems, regulations, and standards” to support “service and

collaboration”, in conjunction with information security technologies and mechanisms, and consolidation and collaboration of common resources, develops various service platforms and diversified channels, provides relevant services based on the needs of the various targets in order to satisfy the needs of all parties.

Main service platforms include: Public Service Management Platform which is used to centrally manage information related to external services of the government agencies, allows the citizens easy access to application information, especially application procedures and the status of the application, etc.; Consultation Service Management Platform which will be developed and will consist of standardized consultation website templates and online survey tools, is a standardized and interactive platform for the citizens to express their opinions so that the government can get a better grasp of public opinion and thus raising the government’s quality of scientific decision-making; Open Information Service Platform which can be used to disclose and centrally manage the government’s open data, improves the transparency of the government and encourages public participation; Civil Servant Management and Service Platform (see 3.1.1.), using its human resources and finance management functionalities, unifies and standardizes the internal administrative management within the government.

In terms of means of service delivery, in addition to various geographical locations which include agency offices, Government

Service Centre, Government Information Centre, and kiosks which are installed at various locations, services can be accessed through means that have no geographical limitations such as the internet and mobile applications, etc.

In terms of consolidation and collaboration of various common resources, in order to avoid repeated development of modules and systems with similar functionalities, the Government Common Application Modules Library (see 3.5.) will be developed according to the plan for the digitization of internal workflow management and public services. Government agencies can utilize the modules in Government Common Application Modules Library in their system development based on the functions and needs of the agencies. In addition, Information Application Knowledge Management Platform (see 3.5.) will be developed to allow IT heads and personnel to access information, exchange knowledge, and provide feedbacks, thus strengthening collaboration within the government.

The operations of various systems and platforms will effectively facilitate the optimization of “agency business and internal workflow management,” accelerate the development of “agency e-service processing and management,” and enable better service quality and response efficiency.

2.2.2. Develop Mechanism for Coordination and Collaboration

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Electronic government development of Macao SAR is a task for the whole government. It requires the rational division of works among the agencies, and at the same time coordination of and collaboration between the agencies. Therefore, in addition to a holistic and forward-looking strategy in dividing the tasks, a multi-level coordination and collaboration mechanism is needed, with the consolidation and coordination of various resources, to effectively implement the various tasks of the General Plan.

In other words, electronic governance is the use of information technologies to facilitate governance and business development. Following the optimization of administrative procedures, digitization of public services and administrative workflows will be carried out. This involves top-down planning from the management. It also involves self-motivation and innovation of business and IT personnel from the bottom. For this reason, the planned coordination and collaboration mechanism comprises two parts: organizational and motivational.

Addressing the different levels of needs, the organizational part mainly consists of three levels of coordination and collaboration: internal, between personnel of different agencies, and the government as a whole.

1) In order to form a regularized and systematic mechanism at the operation level, and to strengthen cross-agency collaboration, a dedicated working team which includes the leader, IT head, and

personnel of its IT and related business units will be formed in each government agency. This will ensure there is enough coordinating and execution capability to support the effective operation of the cross-agency collaboration mechanism. The working team will be responsible for promoting the optimization and digitization of internal management and external service related works such as work procedures and public services, improving the internal operations while at the same time facilitating cross-agency collaboration.

2) To avoid repeated development of common systems and allow the rational use of IT human resources, and to abide by the “consolidation and collaboration of common resources” principle, based on the development of Government Common Application Modules Library, SAEP will develop the Information Application Knowledge Management Platform (see 3.5.). The platform will allow IT heads and personnel to access information, exchange knowledge, and provide feedbacks. During the process of implementing the General Plan, when there is a need to add to or modify modules in the Government Common Application Modules Library, or when there is a need to use an existing module to develop a new system or a new service, government agency can make use of the Coordination and Collaboration Mechanism or through the Information Application Knowledge Management Platform to cooperate with agencies with the necessary expertise. Work can be done in the form of a cross-agency development team, or, when necessary, a team of IT personnel can be

gathered in one of the agencies to jointly develop the required system or module. The completed module can then be added to the Government Common Application Modules Library. It will enrich the library's contents, and the development experience can be shared among government agencies through the Information Application Knowledge Management Platform.

3) In order to improve the General Plan, ensure that the development plan of each government agency is in line with the SAR government's General Plan, coordinate cross-agency business workflows, and to establish regulations and mechanisms for data interconnection of one-stop e-services, a Coordination Group for Electronic Governance will be formed under the existing Coordination Committee of Public Administration Reform, with members from the leaders, IT heads and related personnel of those agencies that are closely related to electronic governance development. The main function of the coordination group is to coordinate, collaborate, and follow up on the optimization and digitization of cross-agency collaboration works such as administrative procedures and public services.

The motivational part consists of two measures: rewards and training.

In terms of rewards, relevant e-services and electronic governance team awards, etc. will be considered to be added to Government Quality Service Awards (currently the Outstanding Team Award, the

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Quality Service Award, the Frontline Service Award, and the Information Technology Award). Individual awards such as Outstanding Information Technology Personnel Award, etc. will also be considered. The aim is to improve the motivation of IT personnel while developing public e-services. IT people will be encouraged to be innovative and to submit to the government any design or solution that will improve the government's services. Submissions can be by an individual or by a team and can be in the form of a software application or a mobile application. After appropriate evaluation, rewards will be given based on actual application levels.

In terms of training, to support the implementation of the General Plan, training will be given to directors, chiefs, IT and related business personnel in stages in order to strengthen the capability of the agencies, to continuously improve the tasks of the plan, as well as to raise the relevant expertise level.

2.2.3. Perform Assessment to Facilitate Improvement

Assessment not only enables policy makers and decision makers to have a more accurate grasp of the development situation, the results of the assessment can also serve as a reference for future optimization works. In order for the different levels of coordination and collaboration mechanism to follow up the progress of the General Plan as well as the plans of government agencies, to ensure the

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outcomes meet the expectations, and to make improvements accordingly, it is necessary to gradually establish an electronic governance development assessment mechanism in support of the coordination and collaboration mechanism.

The assessment mechanism that will be established will consist of two parts: one is to measure, based on project results, if the progress of the projects and the results have reached the expected objectives. The other one is to evaluate the effectiveness of the projects and overall development. For the effectiveness of the projects such as public services, assessment can be done through customer satisfaction surveys by an independent institution using scientific and quantitative indicators. The effectiveness of overall development will be based on the assessment framework for electronic government developed jointly by Waseda University and the International Academy of CIO together with other well-known assessment frameworks. Assessments will be done to study and evaluate the overall electronic governance development situation and effectiveness of Macao SAR, especially the different aspects of smart cities, and smart governance in particular.

3. Contents of the Plan

According to the objectives, principles and implementation strategies, and the various components of the Electronic Governance Development Framework, the General Plan is divided into six main areas of works: 1) Digitization of business procedures and internal administration; 2) Redevelopment of the Government Portal and promotion of open data; 3) Development of public e-services; 4) Improvement of consultation and public participation network; 5) Infrastructure, information security and crisis management; 6) Establishment and improvement of systems, training, publicity, and promotion.

3.1. Digitization of Business Procedures and Internal Administration

To create the conditions to provide quality services for the citizens, in the future, through the Coordination and Collaboration Mechanism, all government agencies will be asked to formulate and implement a plan to optimize and digitize their business procedures. SAFP will undertake the coordination work for the optimization and digitization of cross-agency workflows. SAFP will also provide the necessary electronic tools for document exchange involved in cross-agency workflows.

In terms of the digitization of internal administrative management, SAFP will collaborate with relevant agencies to study and develop a unified management platform for businesses with relatively high degree of commonality, especially those related to human resources, finance, assets, paper and electronic documents management, and will use the platform's standardized data storage format and unified administrative management procedures to raise the effectiveness of administrative management and have a better handling of relevant businesses.

3.1.1. Full-scale implementation of Civil Servant Management and Service Platform

Civil Servant Management and Service Platform (G2E Platform) will be used as the main tool to realize the digitization and standardization of internal administrative management in the Electronic Governance Development Framework.

In the standpoint of service providing, the G2E Platform is a web-based unified management platform. With a centralized data storage, it provides electronic management services to directors, chiefs, and civil servants through a safe and encrypted network. It will be implemented in stages based on the requirements of the general internal administrative management, and it will gradually become a unified, safe and stable platform with diversified services.

In the standpoint of application service development, modules with a high degree of commonality such as SAR government organizational chart, calendars and holidays, a directory of government agencies, login accounts for civil servants and access control, personalized calendar, document management, workflow management, etc. will be developed using a service-oriented approach. The G2E Platform will gradually become a development platform with reusability, extensibility, and sustainability.

In the standpoint of service development, the G2E Platform will fully support the future overall review and reform of the civil service management system by the government. Based on reform areas such as human resources planning, recruitment, careers, promotion, assessment, and training, etc., new modules will be developed and added to the platform or existing modules will be modified to reflect the required changes. The G2E Platform will build a solid foundation for the realization of electronic civil servant management.

Currently, services provided by the G2E Platform include human resources management, finance management, the signing of electronic official letters, a directory of government agencies, contact list of personnel, etc. In the future, the following works will be carried out:

Major projects:

- a) Complete the implementation of training application for civil servants; implementation of promotion workflow and application and approval for family subsidies. (2015)

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- b) Gradually integrate other data, including human resources, staffing requirements, training requirements, performance evaluation and accumulation of tasks, etc.; promote the platform to other government agencies. (2015-2016)
- c) Optimize and digitize internal administrative management procedures such as processing of the application and approval or daily allowance, and proposal for provisional substitution, etc. (2016)
- d) Continue to gradually develop new modules in order to provide more services, including civil servant profile module, collaborative work module, and bulletin board module. (2017-2019)
- e) Provide timely updates of related functions in support of the reform of Civil Servants Management Mechanism. (2017-2019)

3.1.2. Development of Electronic and Paper Document Management and Exchange Platform

To support the needs for the management of electronic and paper documents produced during the digitization of internal administrative management and cross-agency business procedures, Electronic and Paper Document management and Exchange Platform will be developed, allowing government agencies to track the status flow of the document within agency units or between agencies and manage accordingly.

In order to speed up the development process, development will be based on the existing document tracking system and Electronic Document eXchange (eDocX) System.

Major projects:

- a) Redevelop the eDocX System to form a common Electronic and Paper Document management and Exchange Platform, thus realizing unified management of documents, and cross-agency business procedure monitoring and document tracking. (2016)
- b) To support the optimization of cross-agency workflows, deploy the platform in agencies related to the relevant workflows and gradually promote the platform to other agencies. (2017-2019)

3.1.3. Optimization and Digitization of Cross-agency Business Systems and Business Procedures

To increase the efficiency of cross-agency administrative procedures of government agencies, improve cross-agency collaboration and relevant workflows, and raise the quality of service, the SAR government will optimize cross-agency services through three means: “accept application through a single coordinating agency,” “optimize workflows,” and “strengthen electronic applications.”

At present, when filing an application, a citizen may need to go to other agencies to submit the supporting documents. Examples are Legal Affairs Bureau’s Land Registry and Civil Registry,

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Identification Bureau's Criminal Record Certificate, and Financial Services Bureau's Sales Tax Clearance Certificate, etc.

To spare citizens the hassles of having to approach various agencies, it is planned to use those certificate applications with high usage rates by agencies under the Secretariat for Administration and Justice and Finance Services Bureau as pivot services for optimization. A study will be done to install kiosks at the service points where relevant certificates can be applied and obtained. Electronic and Paper Document management and Exchange Platform can also be used for the transmission of electronic documents, and a study will be done to utilize the Electronic Postal Certification Mark by the Macau Post to provide legal validity of the date and time of electronic documents. After the above measures have been verified to be feasible and receive relevant legal support, they will be applied to other cross-agency certificate services, thus reaching the goal of citizens obtaining services at a single service point.

As for public services that require cross-agency collaboration or provision of opinions, the Coordination and Collaboration Mechanism of electronic governance will be used to promote the optimization of cross-area or cross-agency services and procedures, further strengthening the digitization of internal administration and workflows of government agencies, and link the "back office" businesses of agencies together for smoother, higher efficiency operations, thus providing better support for "front office" services.

Furthermore, Electronic and Paper Document Management and Exchange Platform will be used to strengthen the monitoring of document flows, thus creating the conditions for government agencies to monitor the whole approval process. In the meantime, through the integration of Electronic and Paper Document Management and Exchange Platform and Public Service Management Platform (see 3.3.1.), service users can apply for public services online. They can also see clearly the status of the application, thus enhancing the transparency and level of digitization of cross-agency business systems.

During the implementation of the about tasks, at the same time the SAR government will try to optimize those cross-agency services that are related to people's livelihood, using the Public Service Management Platform to link together livelihood-related services such as birth, marriage, and death so that citizens can spare the hassles of having to approach various government agencies when applying or registering for livelihood-related services.

The SAR government will enhance and optimize the integration of cross-agency service information and workflows through the use of information security, data exchange and sharing, identification, e-payment, kiosks, etc. The aim is to reduce administrative steps and strengthen the use of electronic applications, gradually move towards accepting cross-agency applications through a single agency so that citizens can obtain "one-stop" cross-agency services at the

Government Services Centre or through a single service point, solving the problems of repeated submission of documents, having to go to various agencies, and failed progress enquiry, etc.

Major projects:

- a) Study to utilize Electronic and Paper Document Management and Exchange Platform to transmit digitized certificates from government agencies. (2016-2017)
- b) Study to integrate Electronic and Paper Document management and Exchange Platform with Public Service Management Platform. (2016-2017)
- c) Gradually promote the platform to be used in related agencies in order to support the optimization of cross-agency workflows and e-services. (2018-2019)

3.2. Redevelopment of the Government Portal and Promotion of Open Data

To continuously improve and to meet the increasing demands, implementation of the redevelopment of the government portal will be performed, and all government agencies will be supporting this task. The government portal will be information and service-oriented, that is, it will be displaying the functions of each government agency, information relating to important activities, and services provided by the agencies. The portal will be integrated with Public Service

Management Platform (see 3.3.1.), Consultation Service Management Platform (see 3.4.) and Open Information Service Platform (see 3.2.2.), etc. to provide citizens a convenient means to search for information, apply for services, check for application status, and express their opinions about government policies.

In terms of the promotion of open data, the SAR government will gradually open up its public data so that the public can use their creativity with the open data to develop various kinds of online services, mobile applications or other applications.

3.2.1. Redevelopment of the Government Portal

The Macao Government Portal is a website that is targeted to the public, providing them with information and services through a single entrance. In order to continuously improve the governmental portal, SAFP has started in 2014 the redevelopment of the new portal and has commissioned the University of Macau to do a study of the planning and an analysis of the requirements of the portal.

Based on the above study and analysis, and suggestions gathered from various government agencies through a consultation, and taking into consideration the needs of the agencies to redevelop or enhance their websites to comply with the Guidelines for Government Agency Website: Look and Feel and Functionalities, the redevelopment of the government portal will be done in the following areas:

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— Using an information and service-oriented approach, that is, displaying the functions of each government agency, information relating to important activities, and services provided by the agencies, the portal will be integrated with Public Service Management Platform, Consultation Service Management Platform, and Open Information Service Platform, etc. to provide citizens a convenient means to search for information, apply for services, check for application status, and express opinions about government policies.

— Focus on the optimization of the functionalities and ease of use aspects of the portal, including making it easier to search for information, etc.;

— Develop a standard for organizing and grouping of website information, and optimize the presentation of service procedures. Meanwhile, integrate the data in the portal with other agencies' data in order to ensure the consistency of the information and data exchange formats, thus lowering the maintenance costs;

— On the basis of existing sub-entrance for citizens, tourists, and businesses, perform a study on adding sub-entrances in order to allow different service users to easily obtain needed services and information;

— Support logins using government-approved personal accounts to allow personalized services; also, support security

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mechanisms such as two-factor authentication, digital certificates, etc., ensuring the validity of the application service;

— The portal will support devices such as mobile phones, tablets, and desktop computers, etc. such that service targets will be able to obtain e-services and information about government agencies at any time through different means.

Major projects:

- a) Complete the redevelopment of the government portal. (2015-2016)
- b) Continuously optimize the portal's functionalities according to the needs of e-services and the opinions collected after the deployment of the new portal. (2017-2019)
- c) Gradually integrate with information platforms such as Public Service Management Platform, Consultation Service Management Platform, and Open Information Service Platform. (2017-2019)

3.2.2. Promotion of Open Data

Learning from other countries' experience of harnessing the wisdom of crowds, the SAR government will gradually open up its public data so that the public can use their creativity with the open data to develop various kinds of online services, mobile applications or other applications. This will not only satisfy the needs of the

people but will also drive the development of local IT industry and facilitate the development of talents.

Based on the above, Open Information Service Platform will be developed to open up data that can be disclosed by government agencies using standardized formats. The platform will provide tools for the agencies to manage the dissemination of data; it will also provide a single entrance for the public to easily obtain and use relevant data resources.

Government agencies can timely provide data to the public based on their own plans, given that the open data are not classified or related to personal data.

Major projects:

- a) Formulate open data related policies for the SAR government. (2017)
- b) Study and develop guidelines for open data, data categories, and format standards, etc. (2018)
- c) Complete the development of Open Information Service Platform and promote the platform. (2018-2019)

3.3. Development of Public E-services

According to the five-year electronic governance plans provided by government agencies, in order to fulfill the needs of various interested parties such as citizens, businesses, civic associations, civil servants, government agencies and decision makers, government

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agencies will gradually develop and launch various convenient and safe personalized e-services that will mainly focus on online application and inquiry for application processing, and also appointment services.

To facilitate the full implementation of e-services, on one hand, the SAR government will drive the agencies in optimizing their business and internal procedures. Supported by Coordination and Collaboration Mechanism of electronic governance, and according to the Work Plan for Optimizing Cross-agency Services by SAEP, cross-agency service procedures that are of high usage rate, citizens are most concerned with, are related to people's livelihood and related to the economy. On the other hand, SAEP will gradually develop standardized common modules based on the various stages of work after the reform of the Recruitment System for Civil Servants such as registering for an examination/activity, verification of applicant's identity, creation of a personal profile, collection and saving of submitted documents, sending out notifications to applicant, monitoring of application and approval status, management and tracking of documents, etc. It will utilize Government Common Application Modules Library and Information Application Knowledge Management Platform to share information with other agencies as well as IT personnel, realizing the principle of "consolidation and collaboration of common resources."

In addition, Public Service Management Platform will be developed. It allows central management of all e-services provided by government agencies so that citizens can access the application procedures of various government agencies, file an application, and inquire about the status of the application through a single platform.

Furthermore, in addition to providing services through the Government Service Centre and Internet (the SAR Government Portal and government agency websites), the use of multiple channels for service delivery will be promoted, including expanding the use of kiosks.

3.3.1. Development of the Public Service Management Platform

Currently being developed, the Public Service Management Platform will be used by government agencies to manage their own or cross-agency services including service application procedures, application service creation, and application settings. Citizens can use it as a single platform to access the application procedures of various government agencies, file an application, and inquire about the status of the application and receive notifications.

The Public Service Management Platform will utilize various devices such as kiosks at various government agencies, Government Service Centre, and Government Information Centre to provide citizens with multiple channels to obtain services and related information. Also, the platform will integrate with the government

portal, and the Standardized Delivery of Government Information mobile application to give citizens a means to know the application status using various devices.

Major projects:

- a) Develop Public Service Management Platform to support the functional requirements of the Translation Service for Private Entities project. (2015)
- b) Gradually integrate the Public Service Management Platform with the government portal and other public services and internal administration modules or platforms in order to support the different stages of work after the reform of the Recruitment System for Civil Servants. (2016)
- c) Starting with the services provided by the Government Service Centre, gradually develop the corresponding cross-agency service procedures such as inquiry of application status, and relevant information and services can be obtained through kiosks, mobile devices, and websites. (2016-2017)
- d) Fully roll-out the services of the platform, and based on the plans submitted by various government agencies, further planning will be done to include more public services, especially cross-agency services. (2017-2019)

3.3.2. Develop Standardized Delivery of Government Information Module and Mobile Application

Currently, when there are demands, most government agencies will use SMS or a mobile application developed in-house to deliver messages to citizens. The former requires the agency to purchase service from telecommunications operators independently. The latter will require citizens to install the agency's mobile application. The Standardized Delivery of Government Information Module will collect all the messages to be delivered to the citizens by the agencies, then deliver the messages through the Standardized Delivery of Government Information mobile application. Citizens only need to download the Standardized Delivery of Government Information mobile application to receive agency messages. There is no need to install more than one app from various agencies, and at the same time, it is easier to identify and confirm the source of the message than SMS.

Major Projects:

- a) Develop Standardized Delivery of Government Information module and mobile application. (2015)
- b) Officially roll out the Standardized Delivery of Government Information mobile application, and make it available for citizens to download. (2016)

3.3.3. Promotion of Diversified Service Modes

To closely tight to the SAR Government's public administration reform policy, provide quality services, satisfy the demands of

various parties which include citizens, businesses, civic associations, civil servants, government agencies and decision makers, in addition to providing services through Government Service Centre and the Internet (SAR Government Portal and agency websites), the use of multiple channels for service delivery, including expanding the use of kiosks, will be promoted. Furthermore, following the development trend of mobile government, and the development and popularity of mobile devices, the SAR government will drive government agencies to develop more mobile applications and effectively use social media, allowing users to obtain e-services and relevant information through various channels.

Major projects:

- a) Enhance the functionalities of the government portal to support devices such as mobile phones, tablets, and desktop computers, etc. (2016-2017)
- b) Continuously integrate and optimize existing kiosks to support the development needs of the Government Service Centre. (2016-2019)

3.4. Improvement of Consultation and Public Participation Networks

To ensure sound interaction and effective communication between the government and civic associations and citizens, and to more

effectively absorb opinions and demands of the society during the administration process, the SAR Government will do an overall review of the actual effectiveness of the Guidelines for Public Policy Consultation to further increase the transparency of consultations, and to better collect public opinions so that the government can absorb public opinions. Meanwhile, Guidelines for Public Policy Consultation will continuously be optimized for better coordination and monitoring of consultations. Furthermore, to improve public participation, studies on developing multi-level communication channels and dialog mechanism will be carried out.

To support the above works, in terms of improving consultation and public participation networks, the SAR Government will study the feasibility of introducing social networks as a channel to disseminate government information so that citizens can easily receive timely government information. Meanwhile, taking into account the whole process of consultation, including stages of pre-consultation data collection, dissemination of consultation information, clarification of consultation contents, collection of public opinions and compilation of statistics, publishing of completion report, etc., studies for the development of the Consultation Service Management Platform will be carried out. In addition to collecting public opinions, the platform also has activities management and service functionalities. It will be integrated with the government portal to become a single portal for public consultation

and opinion collection. The platform will be disseminating information about consultations through the government portal, agency websites, mobile applications, social media accounts, etc. in order to facilitate public participation. The platform will also provide relevant agencies with a means to manage and monitor consultation activities. And for the organizers of consultation activities, the platform will also provide basic services for consultation such as a standardized survey template and statistical tools.

Furthermore, the SAR Government will carry out studies on the use of big data technologies to assist in analyzing information from the public so that public opinion can be more extensively gauged, improving the government's scientific decision-making level and crisis management capability.

Major projects:

- a) Study and develop Consultation Service Management Platform. (2015-2017)
- b) Carry out a study on the introduction of the policy of and technical solution for using social media to disseminate government information. (2015-2017)
- c) Carry out a study on the application of Big Data technologies. (2018-2019)

3.5. Infrastructure, Information Security and Crisis Management

To provide support to the development and application of the above systems and platforms, for software infrastructure, carrying out the “consolidation and collaboration of common resources” principle and supporting the planning of 3.1 to 3.4 from above, the Government Common Application Modules Library will be developed in phases. In addition, the Information Application Knowledge Management Platform will be developed, consisting of features such as: “Information for Common Application Module,” “Collection of Public E-services,” “Information and Communication Technology (ICT) Knowledge Base,” “Information Application Related Legislation,” “Information Security Tips,” “Knowledge and Experience Sharing,” and “Opinions and Suggestion,” etc. The platform provides a convenient means for IT heads and personnel to obtain information, exchange knowledge and provide feedbacks.

In terms of hardware infrastructure, first, using cloud computing’s features of efficient deployment and stability, together with information security and crisis management, gradually equip the Government Data Centre with cloud computing capabilities offering network infrastructure services with high performance, high scalability, high stability, and high security—Cloud Infrastructure as a Service (IaaS). After the infrastructure has been developed, the

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Government Data Centre will gradually use cloud computing technology to support the development of various platforms——Cloud Platform as a Service (PaaS). It will also provide a series of software or application services such as common module library, instant messaging, etc.——Cloud Software as a Service (SaaS) for use by government agencies, facilitating the development of internal administrative management and e-services of government agencies. Second, to support data exchange between government agencies, the operations of the InforMac network will be reviewed, and its operations and technology framework will be optimized in the following aspects: stability, usability, and security. A second data centre will be established in a new location, and using the lessons learned from introducing cloud computing functionalities in phase one, the two data centers will be complementary to each other. This way, on one hand, cloud infrastructure services can be effectively expanded, and on the other, a high availability mechanism can be developed across the data centers, thus realizing seamless expansion, and providing a foundation for the development of cross-agency information systems, resource integration and sharing, and collaboration.

In terms of information security and crisis management, works will be focused on four aspects: policy, organization, mechanism, and education and support, that is, according to the “Maintaining a balanced development between services and information security” and

“Consolidation and collaboration of common resources” principles defined in the General Plan, continuously promote the centralized management strategy through the Government Data Centre. Meanwhile, SAFP will formulate and execute a prevention and contingency plan (see 3.6.1.6.) after consultation with government agencies. On this basis, a study will be carried out for the development of appropriate security policies and guidelines such as those for Mobile Office. Furthermore, raise the information security and crisis management awareness of different levels of civil servants through training, publicity and promotion activities (see 3.6.2.), and continuously review and improve the related mechanisms using the assessment mechanism.

Government agencies will be committed to strengthening their infrastructure and information security, including raising information security level, updating network security equipment, etc. to provide the region’s electronic governance development with a highly stable and highly secure network infrastructure environment.

Major projects:

- a) Develop and test trial the first phase of the Government Common Application Modules Library to support plans described in 3.1. and 3.3. (2015-2016)
- b) Expand the network infrastructure of the Government Data Centre to make it equip with cloud computing capabilities. (2015-2016)

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- c) Develop and roll out the Information Application Knowledge Management Platform. (2016-2017)
- d) Review and optimize the operations of the InforMac network. (2016-2018)
- e) Develop and roll out the second phase of the Government Common Application Modules Library to support plans described in 3.1. to 3.4. (2017-2019)
- f) Establish the second Government Data Centre, expand the computing power of the network infrastructure, and develop a high availability mechanism across the data centers. (2017-2018)
- g) Study the feasibility of Mobile Office and related solutions. (2017-2019)

**3.6. Establishment and Improvement of Systems;
Training, Publicity, and Promotion**

To support electronic governance development, the SAR Government will establish and improve related systems, including electronic documents, data interconnection, unified identification, a mechanism for electronic payment usage, etc., and relevant standards and guidelines. In addition, government agencies will carry out necessary promotion and training activities when needed.

3.6.1. Establishment and Improvement of Systems**3.6.1.1 Electronic Documents**

The planned Electronic and Paper Document management and Exchange Platform in 3.1.2 will make electronic documents be more extensively used in internal business procedures and business systems. To have legal basis for electronic document applications, based on Electronic Documents and Signatures Law of Macao SAR (Law no. 5/2005) which defines the form and evidentiary value of electronic documents, a study on regulating the evidentiary value of copies of electronic documents, electronic documents released by government agencies, transmission of electronic documents, etc. will be carried out, allowing better regulation of the creation, delivery, storage, reconstruction, copy and transmission of electronic documents and their copies.

Major projects:

- a) Initiate a study on the management guidelines for electronic documents. (2015-2016)
- b) Optimize laws related to electronic document applications. (2016-2017)
- c) Establish guidelines for electronic document management. (2016-2017)

3.6.1.2. Data Interconnection (Interconnection of Information)

To protect person data while ensuring the validity of administrative works, and to have standards for unified common codes for data interconnection and related legislation support for the planned Electronic and Paper Document management and Exchange Platform of 3.1.2 and cross-agency data exchange, a study will be carried out on the optimization and formulation of related legislation and for common coding standards for data interconnection.

Major projects:

- a) Carry out a study on the optimization and formulation of data interconnection related legislation. (2016-2017)
- b) Carry out a study on common coding standards for data interconnection. (2016-2017)
- c) Establish common coding standards for data interconnection. (2017-2018)

3.6.1.3. Development of a Unified Identification Mechanism

At present, when government agencies offer personalized online services, an online account will be provided to the citizens. The Account for Electronic Tax Filing of Finance Services Bureau, the Secure Electronic Postal Box (SEPBox) of Macau Post, and the ePass Account of SAFP are examples. However, since these accounts are created for individual service of an agency, the accounts are not related to each other. So when the citizens apply for online services of different government agencies, they will need to submit their personal

data multiple times since they need to apply different online accounts. On the other hand, government agencies need to put in resources to maintain duplicate accounts of a citizen. Therefore, a study will be carried out to develop a unified identification mechanism so that citizens can obtain personalized services from the government portal or any agency website using one single account. In addition, based on the new account, a two-factor authentication service, and a bulk electronic signing service will be developed.

Major projects:

- a) Carry out a study on a unified identification mechanism. (2015)
- b) Develop a unified identification mechanism. (2016)
- c) Develop a unified two-factor authentication service and bulk electronic signing service. (2016)

3.6.1.4. Development of a Mechanism for Electronic Payment Usage

Currently, the e-Payment Platform by Macao Postal Savings is used by most government agencies as an electronic payment tool for their online services. For those services that are not done online, government agencies will accept VISA, MasterCard, Macau Pass, QuickPass issued by various financial institutions, and also mobile payment tools that are becoming more and more popular. Therefore, a study will be carried on the electronic payment tools and the

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mechanism for electronic payment usage, aiming to let users know the electronic payment tools that can be used in government services, and to support the development of one-stop services.

Major projects:

Develop a mechanism for electronic payment usage. (2015-2016)

3.6.1.5. Development of Standards for Management and Use of Facilities and Services

To support the expansion of the Government Data Centre and provision of Infrastructure as a Service (IaaS) outlined in 3.5, a study will be carried out on the improvement of the standards for management and usage rules for the Government Data Centre. Meanwhile, using a service-oriented approach, standards for service level agreement and service management of Infrastructure as a Service (IaaS) will be developed to provide quality services to government agencies.

Major projects:

- a) Improve the standards for management and develop usage rules of the Government Data Centre. (2016-2017)
- b) Develop standards for service level agreement and service management of Infrastructure as a Service (IaaS), and provide services to government agencies. (2016-2017)

3.6.1.6. Development of Unified Standards for Information Security

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Stability and security are the basic requirements for government operations, and electronic governance development is the inevitable trend, therefore, the SAR Government developed the Information Security Management Framework. Based on the existing foundation, the SAR Government will support the four areas of work: policy, organization, regime, and education and support in conjunction with the four stages: prevention, response, review, and improvement to gradually raise the overall ability and level of information security and crisis management of the SAR Government.

Following the implementation direction, the following main measures will be adopted:

— Continuously promote the centralized management strategy through the Government Data Centre, provide government agencies with network infrastructure services with systematic security services, thus facilitating reliable public e-services.

— Develop more applicable security policies and guidelines, strengthen publicity, promotion, and training, and also create a special section on information security to announce relevant information, thus raising the security knowledge of civil servants, and strengthening their awareness and response ability.

— Announce the Information Security Baseline Standards, raising the ability in crisis management and prevention.

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Announce to government agencies the Information Security Baseline Standard, and introduce a mechanism for crisis management, present basic security standard and requirements for office operation management and information system management. Also, request all government agencies to develop and implement their own internal guidelines based on the baseline and their own needs, and gradually raise the prevention ability in information security.

— Develop a mechanism for the notification of information incidents that allows the SAR Government to timely grasp the incident and handle in a timely manner, enhancing the incident response capability. The notification mechanism will define incident levels, and the corresponding notification procedures will be designed. At the same time, all government agencies will need to assign dedicated staff for receiving and sending the notifications.

Major projects:

- a) Announce the Information Security Baseline Standards, and request government agencies to implement works of information security according to the standards and submit implementation report. (2015-2016)
- b) Develop a mechanism for the notification of information incidents. (2015)

3.6.1.7 Electronic Governance Framework and Relevant Coordination Mechanism

Dispatch No. 39/GM/96 defined the coordination mechanism of the Administration's activities in the field of information technology and establishes some rules to be observed in the study of the acquisition and rental of information equipment or services.

According to the development direction of electronic governance, on the basis of Dispatch No. 39/GM/96, a study will be carried out on the revision of relevant laws and regulations to effectively develop the Electronic Governance Development Framework and corresponding coordination mechanisms, carrying out the coordination and collaboration according to the law.

Major projects:

Carry out a study on the development of the Electronic Governance Development Framework and relevant coordination mechanisms, and revise Dispatch No. 39/GM/96. (2017-2018)

3.6.2. Training, Publicity, and Promotion

While developing electronic governance, at the same time there is a need to strengthen the awareness and participation of the SAR electronic governance of various interested parties. In this way, interested parties will be supporting the development directions of the General Plan, and effectively implementing the various tasks.

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Within the government, there will be increased training. Training, seminars, and workshops will be provided to the directors, chiefs, IT personnel and related business personnel of public organizations, government agencies, and entities to raise the overall awareness of civil servants of various levels on the tasks of the electronic governance general plan. Meanwhile, all government agencies are encouraged to organize internal training on information security and crisis management strategies and related practical operations, raising the knowledge of the related strategies and handling of practical operations of the civil servants of various levels.

Relating to the public, the participation, awareness, and use of electronic governance will be raised by using dedicated websites, organizing seminars, exhibitions, and publicity means such as information technology creativity competitions, etc. and through the use of multimedia such as television and radio to publicize electronic governance projects.

Major projects:

- a) To support the needs of the above works, organize internal training for personnel of different levels and duties; for example, organize information sessions and trainings for dedicated staff, and properly add some contents about information security in training courses for civil servants in order to make civil servants of various levels and areas understand the basic requirements of the Information Security

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Baseline Standards, so that in their course of duties they are equipped with the basic awareness and ability in information security, thus raising the information security awareness of the whole government. (Continuous work)

- b) Strengthen the participation, awareness and use of electronic governance by the citizens through the use of multimedia such as television, radio, and websites, etc. to promote electronic governance projects.
- c) Organize various kinds of exhibitions, seminars, and workshops. (Continuous work)
- d) Organize information technology-related competitions. (Continuous work)

4. Conclusion

The Macao SAR Electronic Governance Development General Plan 2015-2019, established after a consultation of government agencies and a consensus was reached, will guide the overall development of electronic governance of the Macao SAR. Based on the objectives, principle, and strategies defined in the General Plan, government agencies will make every effort to complete together in an orderly manner the various tasks in the plan. Through the establishment and improvement of Systems, in conjunction with ongoing training, publicity and promotion for electronic government, after five years of joint efforts, it is anticipated that electronic government development of the SAR will achieve the following results:

— The internal administrative procedures of most government agencies will be standardized and electronic internal management will be implemented, and the Civil Servant Management and Service Platform will be used as a standardized electronic tool for internal administrative management, allowing the simplification of daily workflows, raising internal administrative efficiency, and increasing transparency. Policy makers will be able to utilize the various service management platforms to quickly obtain the operation of the government, especially data related to services, personnel management, and operation of government agencies, improving the quality of management and facilitation of scientific decision-making.

Civil servants will be able to have access to personal information, request for internal applications, and apply for training courses through multi-channel e-services.

— To support the orderly implementation of the Work Plan for Optimizing Cross-agency Services by SAEP, most cross-agency service procedures that are of high usage rate, most concerned by the citizens, and related to people’s livelihood and the economy will be fully digitized, effectively raising cross-agency administrative procedure efficiency and realizing “accept application through a single coordinating agency,” “optimize workflows,” and “strengthen electronic applications.” On the basis of expanding the service areas of kiosks, government agencies will utilize the Electronic and Paper Document Management and Exchange Platform and the Public Service Management Platform to realize the exchange of certificates, data interconnection, and monitoring the progress of cross-agency approval process. Accepting cross-agency applications through a single agency will be realized so that citizens will be able to obtain “one-stop” cross-agency services at the Government Services Centre or through a single service point, reducing the needs for the citizens to go to different agencies for a same service or services related to people’s livelihood.

— The redevelopment of the government portal and the integration with the data from government agency websites will be completed, supporting devices such as mobile phones, tablets, and

desktop computers. The integration of the government portal with information platforms such as the Public Service Management Platform, the Consultation Service Management Platform, and the Open Information Service Platform, etc. will be completed, public consultation entrance will be added and open government data will be provided such that the government portal will offer the three main functionalities: information, services, and consultations. For public services that are fully digitized, citizens can use government approved personal account to log onto the government portal, query government information (including open data) and application status, obtain personalized e-services and express opinions pertaining to public consultations. Furthermore, the Standardized Delivery of Government Information mobile application will become an effective tool for the government to deliver notifications and information to the citizens.

— Government agencies can utilize the modules in the Government Common Application Modules Library in their development based on the functions and needs of the agencies. IT heads and personnel can utilize Information the Application Knowledge Management Platform to access information, exchange knowledge, and provide feedbacks. In addition, the computing and operating capacities of the government network infrastructure and the Government Data Centre will be further enhanced. Meanwhile, the

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overall level of information security and crisis management abilities of the SAR will be comparable to advanced countries.

During the process of implementing the General Plan, various effective channels will be utilized to collect the opinions of various interested parties in electronic governance, especially those of the public, such that the General Plan can be timely adjusted.

Finally, SAEP would like to express its sincere thanks to all government agencies, units, and personnel participated in the consultation.