LC Paper No. CB(1)1114/05-06(01)

For information

Legislative Council Panel on Transport

Temporary Retention of One Supernumerary Chief Engineer Post in the Technical Services Branch of Transport Department

PURPOSE

This paper briefs Members on our proposal to retain temporarily a supernumerary Chief Engineer (CE) (D1) post in the Technical Services Branch of the Transport Department (TD) for two years up to 21 June 2008 to oversee the implementation of the Transport Information System (TIS) and Traffic Control and Surveillance Systems (TCSS), as well as the development of Information Technology (IT) applications.

JUSTIFICATION

Creation of the Post

2. According to the recommendations of the Intelligent Transport Systems (ITS) Strategy Review Study conducted by TD in 2001, a centralised TIS and a more comprehensive traffic management framework should be established to enhance traffic flow and safety of our road network. The Finance Committee (FC) approved on 22 June 2001 vide EC(2001-02)11 the creation of the supernumerary post, namely, the Chief Engineer/Intelligent Transport (CE/iT) post, for five years up to 21 June 2006 to cope with the increased complexity and volume of work related to the development and implementation of ITS. As it is expected that the outstanding projects under ITS can only be completed by 2008, it is necessary to retain the post for another two years. The progress of the ITS projects, including the latest developments and the contractual problems of TIS, were reported to the Legislative Council Panel on Transport in May 2002, March 2003 and August 2005.

Tasks undertaken by CE/iT since June 2001

3. Over the past years, CE/iT has formulated action plans to implement the key projects under the ITS Strategy, promoted the development of ITS applications through public/private collaboration, co-ordinated and liaised with concerned parties to implement the key projects and planned resources for new initiatives. The tasks completed include expansion of traffic information services on the Internet, provision of the Journey Time Indication System (JTIS) on Hong Kong Island, award of a contract for the implementation of TIS, completion of the Investigation Study on the Expansion of Speed Enforcement Camera System and planning for the study on congestion charging and use of advanced technologies in incident management.

4. As far as TCSS is concerned, the tasks so far completed by CE/iT include the implementation of TCSS for Tsing Yi North Coastal Road and Hong Kong-Shenzhen Western Corridor/Deep Bay Link (SWC/DBL); replacement of the TCSS in the Airport Tunnel and Aberdeen Tunnel; and the provision of Closed Circuit Television (CCTV) systems on Tolo Highway between Ma Liu Shui and Tai Po and approach roads to the Disneyland in Penny's Bay. Besides, CE/iT has overseen the planning for the provision of additional CCTV cameras and variable message signs in the urban areas and the New Territories, TCSS for Fanling Highway between Tai Hang and Yuen Chau Tsai, Tolo Highway, Tuen Mun Road, Central-Wanchai Bypass, Hong Kong-Zhuhai-Macao Bridge and North Lantau Highway Connection. He is currently monitoring the implementation of TCSS in Tung Chung Road, Route 8, and Route 9 extension in Tsuen Wan.

Outstanding and New Tasks

(a) Transport Information System

Original Proposal

5. One of the key recommendations under the ITS Strategy is the establishment of a centralised TIS, which is a centralised data warehouse for the collection, processing and dissemination of comprehensive transport information. Two key services, namely the Intelligent Road Network (IRN) and Public Transport Information Services (PTIS) will be provided under TIS. A brief on TIS is at **Enclosure 1**. CE/iT is responsible for managing the TIS project to ensure its timely and satisfactory completion.

Encl. 1

Subsequent Development

6. TD invited tenders for the implementation of TIS in April 2002 and awarded the contract in May 2003. The project was originally scheduled for completion in December 2004. However, as mentioned in Panel paper CB(1)2213/04-05(01), TD experienced difficulties with the contractor, which resulted in serious delay in the implementation of the project. The contract was eventually terminated in February 2005. Throughout the period, CE/iT had closely monitored the progress of the project and took actions to deal with the issues raised by the contractor to ensure that the system design would comply with the requirements as stipulated in the contract. When there were serious disputes between TD and the ex-contractor in the later stage, he provided support and advice to the top management, on the one hand to try to rescue the project, and on the other hand to protect the interests of the Government. When considering proposals put forward by the ex-contractor, he led the project team to conduct detailed analysis and consulted the concerned stakeholders to ensure that the key components and main functions of the system would not be jeopardised.

Importance of TIS

7. TIS is one of the major projects under the ITS Strategy which will bring about significant benefits both internally for TD's daily operation and externally to the transport operators, value-added service providers and the general public. The project was supported by the LegCo Panel on Transport, and FC approved the funding at its meeting on 1 June 2001. To implement TIS as soon as possible in order to realise the benefits, TD re-tendered the contract on TIS project in November 2005.

Re-tendering of TIS Contract

8. In preparing the new set of tender documents, CE/iT closely liaised with Government Logistics Department and Department of Justice on the terms to be included in order to avoid recurrence of the incident. He needs to continue to keep close liaison with all stakeholders to ensure proper and timely completion of the new contract.

Latest Position

9. After the serious traffic congestion on 9 May 2005, the Secretary for the Environment, Transport and Works appointed a Task Force to review and recommend measures to enhance emergency transport co-ordination. One of the recommendations is to establish a Geographic

Information System (GIS) platform for the collection and dissemination of real-time traffic information and incident management. In this connection, IRN, which makes use of GIS, will provide the infrastructure for consolidating and disseminating real-time information collected from other sources, such as the CCTV systems, JTIS and automatic incident detection systems. In view of the need for an IRN that would provide accurate and updated traffic information to the general public and the strong request from service providers for a common IRN platform to facilitate the development of add-on services, we need to put IRN in place as soon as possible.

10. In light of the above, when tenders for the new TIS contract were invited in November 2005, the focus was on the provision of IRN, while the provision of PTIS would be implemented separately. The latest scope and key tasks of the TIS project are at **Enclosure 2**. Tender evaluation is near its final stage, and the new contract is scheduled to be awarded before mid 2006. The contract period is 18 months and the system is scheduled for completion by the end of 2007.

Encl. 2

11. On PTIS, in recent years, public transport operators, academic institutions and the private sector have developed a number of products that provide similar services. To avoid duplication of effort and waste of resources, TD will continue to liaise with the service providers to explore partnership opportunities and the best options to implement PTIS in a timely and cost-effective manner. This will require directorate steer in the development of and agreement with the service providers on the Government's participation and financial arrangements, such as viable collaboration model options, division of responsibilities, ownership of data and systems, etc. We plan to implement PTIS by end 2007 when TIS is ready for launch.

Need for the Retention of the CE/iT Post

12. To ensure that the TIS project would be implemented smoothly and effectively, a dedicated directorate officer is needed to closely monitor and properly manage the project plan, including the schedule of key tasks, associated resource requirements, division of responsibilities, collaboration among concerned parties and other related issues. We need to retain the CE/iT post to provide professional advice and direction, and to conduct regular meetings with the senior management of the new contractor to ensure mutual understanding of the requirements, availability of adequate resources and timely resolution of problems encountered. It is considered that a Traffic Engineer at directorate level is required to oversee the business areas of TD and provide the transport expertise to take forward the project.

13. Apart from project management, the implementation of TIS also entails major changes to the daily operation of TD. We need to retain the CE/iT post to liaise with various stakeholders, including different branches in TD, public transport operators and relevant government departments. He will also have to provide guidance in the development of the system architecture for the integration of existing systems containing data on traffic accident, black sites, parking, annual traffic census, car journey time surveys and public transport and common data standards. Many currently stand-alone transaction processes such as the provision of public transport service schedules, transport statistics, traffic light signal data, ad-hoc survey results, etc. will be converted to online processes. A lot of records will be transformed into spatially indexed digital databases. The CE/iT will also need to explore with the stakeholders business process re-engineering opportunities to streamline the workflow of relevant business functions, thus enhancing the collection, retrieval and analysis of transport and traffic information. The CE/iT is also required to provide expert advice on the capabilities and limitations of TIS in terms of traffic and transport data standard, data analysis functions, workflow development, etc., such that a practical approach can be derived. The complexity and sensitivity of the business process re-engineering issues require adequate guidance and prompt decision of a directorate officer.

14. The provision of TIS will facilitate the private sector to develop value-added services, such as public transport and traffic information services and fleet management and car navigation systems, and benefit the public at large. CE/iT is discussing with various telecommunication service providers the arrangements to broadcast real-time traffic information captured by the CCTV systems to mobile phone users. TD needs to continue to promote collaboration with the private sector and foster the development and provision of value-added services through the use of information generated from TIS. Directorate support is essential for the effective liaison among government bureaux/departments and negotiation with the private sector on partnership opportunities to safeguard the Government's interests in public-private partnership.

15. Both the TIS and PTIS projects are expected to be completed by the end of 2007. To allow a few months for tackling possible teething problems after the commissioning of the systems, we propose to retain the CE/iT post up to 21 June 2008 to meet the operational needs.

(b) Traffic Control and Surveillance Systems

Projects to be Implemented in the Coming Years

16. Another key recommendation of the ITS Strategy is the provision of TCSS on all strategic roads to enhance the traffic management framework. TCSS include CCTV cameras, incident detectors, variable message signs, variable speed limit signs, lane control signals, etc. They would enable TD to monitor traffic conditions, detect traffic incidents, provide motorists with important traffic information and divert traffic to improve traffic management. If the proposed retention is approved, in the coming two years, CE/iT will continue the planning and implementation of those on-going projects listed in paragraph 5 above, including TCSS for Central-Wanchai Bypass, Hong Kong-Zhuhai-Macao Bridge, North Lantau Highway Connection, Tung Chung Road, Route 8, Tuen Mun Road, etc. He will also carry out the planning of TCSS for Central Kowloon Route. In addition, he will continue to provide guidance on the operation and maintenance of the existing and newly completed TCSS/CCTV systems.

Need for the Retention of the CE/iT Post

17. In view of the advancement of technologies, TCSS are becoming more complex and its interface with other systems more complicated. The involvement at directorate level is particularly important throughout the planning and implementation stages, particularly for cross-boundary routes such as the Hong Kong-Zhuhai-Macao Bridge and North Lantau Highway Connection, the construction of which are under a very tight timeframe and requires close liaison with the Mainland authorities. Continuous directorate support will be required for the on-going TCSS projects. We would review the establishment of TD when the proposed CE/iT post lapses in mid 2008, having regard to the prevailing workload, and explore the possibility of assigning the residual work to other directorate officer(s).

(c) Other IT Systems/Applications

18. CE/iT is also required to oversee the Computer Services Section and Infrastructure Section to ensure that the development of other IT applications within the department would tie in with TIS. In particular, CE/iT's input is required for the following items –

(a) the implementation and enhancement of the infrastructure network in order to meet the implementation requirements of TIS;

(b) dissemination of emergency traffic information to the public via TD's website and mobile phones; and

(c) enhancement of the emergency transport coordination system to facilitate inter- and intra-departmental communication in the event of emergency traffic incidents.

19. We anticipate that these projects would have been completed by mid 2008. We would review the establishment of the two Sections nearer the time, having regard to the prevailing workload, and explore the possibility of redeploying them to come under the supervision of other directorate officer(s) when the proposed CE/iT post lapses.

Encls. 3 &4

20. The original and proposed job description of CE/iT and the existing and proposed organisation chart of TD are at **Enclosure 3** and **Enclosure 4** respectively.

ALTERNATIVES CONSIDERED

21. We have examined critically the possibility of assigning the responsibilities being or to be undertaken by CE/iT to the other six CEs in the other divisions but consider this not feasible. CE/Strategic Roads and CE/Priority Railway are fully engaged in overseeing the planning and implementation of strategic road projects and railway projects respectively. CE/Traffic and Transport Survey is looking after various traffic and transport surveys. CE/Transport Planning is responsible for the planning of the transport infrastructure. CE/Road Safety and Standards covers road safety and standards issues and provides support to the Road Safety Council in formulating road safety policies and strategies. The remaining CE/Traffic Control deals with the planning and implementation of new area traffic control systems and CCTV systems for signalised road intersections and the operation and expansion of the existing systems. They are all fully engaged in their own schedules of duties.

22. We have also considered putting the key tasks proposed to be undertaken by CE/iT under the direct supervision of an Assistant Commissioner for Transport. However, most of the tasks require both management skills and technical knowledge, as well as frequent communication with and intensive involvement in the work of working teams and different stakeholders. It is more appropriate and effective for them to be undertaken by a directorate officer while the Assistant Commissioner for Transport can focus on overall strategy formulation and monitoring, resources acquisition and management, etc.

FINANCIAL IMPLICATIONS

23. The additional notional annual salary cost at mid-point of the proposal is $1,144,200. The full annual average staff cost of the proposal, including salaries and staff on-costs, is $1,703,000. The additional resources required will be met by internal redeployment of existing resources within the Environment, Transport and Works Bureau. The proposal is covered in ECI(2005-06)6.

WAY FORWARD

24. Subject to Members' views, we will submit the staffing proposal for the Establishment Subcommittee's consideration on 3 May 2006 and for FC's approval on 19 May 2006.

ADVICE SOUGHT

25. Members are invited to note the content of this paper.

Environment, Transport and Works Bureau
March 2006

Enclosure 1

Brief on the Transport Information System project

It is Government's policy to promote wide application of innovation and technology to add value to our services. On the transport front, the Administration will pursue the Intelligent Transport Systems (ITS) to achieve its policy objective. In 2000-01, the Transport Department (TD) conducted an ITS Strategy Review Study with a view to developing a long-term ITS deployment plan for Hong Kong. The Study recommended the establishment of a centralized Transport Information System (TIS) and a more comprehensive traffic management framework to enhance traffic flow and safety of our road network. The Study further suggested that private sector initiatives should be encouraged to make use of these systems to provide tailor-made services to individual road users. The proposed ITS Strategy was presented to Legislative Council (LegCo) Panel on Transport in March 2001 and Members generally supported the Strategy.

2. TIS is one of the major projects under the ITS Strategy. It is a computerized system which integrates transport and traffic data into a common, structurally formatted central database to enable information sharing and data analysis in an efficient and effective manner. It will collect, process, analyse and disseminate comprehensive transport information including traffic conditions, progress of road works, traffic diversion measures, public transport services and traffic incidents. TIS will provide two key services, namely, the Intelligent Road Network (IRN) and the Public Transport Information Service (PTIS). IRN will provide up-to-date information on traffic directions, turning movements at road junctions and stopping restrictions, etc. Upon completion of the IRN, value-added service providers in the private sector, including telecommunication companies, fleet and freight operators, logistic and information technology organisations, can make use of the information for the development of ITS applications such as car navigation, fleet management systems and personalised information services to the public. PTIS is intended to be a service on the Internet providing transport and traffic information to public transport users and motorists for pre-trip planning. It will allow public transport passengers to search for their optimum routes based on distance, cost and number of interchanges. Motorists can search for their optimum driving routes on the digitised map based on options such as distance and toll.

3. The LegCo Panel on Transport supported the TIS proposal at its meeting on 18 May 2001 and the Finance Committee approved the funding of $63.6 million for the implementation of TIS at its meeting on 1 June 2001. The Administration invited tenders for the implementation of TIS in April 2002 and awarded the contract in May 2003, which was scheduled for completion in December 2004. However, TD experienced difficulties with the contractor during the course of the contract, which resulted in serious delay in implementation. The contract was eventually terminated in February 2005.

Enclosure 2

Scope and Key Tasks for the Implementation of the Transport Information System

Scope

There are over 200 transport and traffic datasets in various formats in TD's offices located at seven main locations. The scope for the implementation of the Transport Information System (TIS) is as follows -

(a) build a central data warehouse of transport and traffic data to unify the business functional modules into a common browser-based user interface over a departmental portal to facilitate the day-to-day operation of TD;

(b) build an application module from the data warehouse for Traffic and Transport Information Services into a common browser-based user interface over a public portal through a website to display traffic and transport information to the general public;

(c) build a service package of updated information from the data warehouse to support provision of an Intelligent Road Network to value-added service providers;

(d) make available on-line access to other government departments: Highways Department for co-ordination with its maintenance programme and strategic project implementation; Hong Kong Police Force and Fire Services Department for the provision of transport and traffic information for their dispatch management systems; and

(e) provide the data, communication and application interface protocol standards for the industry to provide a conducive environment for promoting Intelligent Transport Systems applications in Hong Kong.

Key tasks

CE/iT and his project team would be responsible for managing the contractor and liaising with concerned parties with respect to the following tasks to ensure the timely and successful delivery of the system -

(a) perform project management and quality assurance for the successful implementation of the system within the specified implementation plan and approved budget;

(b) supervise and co-ordinate the implementation services including system analysis and design, application development, data standardization, conversion and migration, network design and configuration, system acceptance testing and commissioning, training, documentation, etc.;

(c) arrange for site preparation, supply, delivery, installation, interfacing and integration of hardware and software, disaster recovery facilities, communication cabling and other equipment;

(d) liaise with government departments and transport operators to agree upon data exchange and sharing;

(e) conduct business process re-engineering and formulate the implementation plan; and

(f) arrange on-going system support and maintenance services.

Enclosure 3

Original Job Description for
Chief Engineer (Intelligent Transport)
(as shown in Enclosure 5 to EC(2001-02)11 and
approved by the Finance Committee in June 2001)

Rank: Chief Engineer (D1)

Responsible to: Assistant Commissioner for Transport/Technical Services (D2)

Main Duties and Responsibilities -

(1) promote and execute action plans for implementing the key projects under the proposed Intelligent Transport Systems (ITS) Strategy;

(2) promote the development of ITS applications through public/private collaboration;

(3) provide guidance for the implementation of the key projects under the proposed ITS Strategy including Transport Information System, Traffic Management and Information Centre and Journey Time Indication System;

(4) co-ordinate and liaise with other branches in Transport Department, other government departments, transport operators, system suppliers/integrators and service providers for the implementation of the key projects;

(5) plan and co-ordinate resources for new initiatives of ITS applications;

(6) plan and implement the provision of Traffic Control and Surveillance facilities on the existing Strategic Road Network;

(7) provide traffic engineering input for the development of information technology in Transport Department;

(8) consult Transport Advisory Committee, Legislative Council Panel on Transport and other concerned parties, and attend meetings as necessary, on the recommendations of the ITS Strategy Review; and

(9) oversee the administration of the Intelligent Transport Division.

Proposed Job Description for Chief Engineer (Intelligent Transport)

Rank: Chief Engineer (D1)

Responsible to: Assistant Commissioner for Transport/Technical Services (D2)

Main Duties and Responsibilities -

(1) promote the development of Intelligent Transport Systems (ITS) in Hong Kong through public/private collaboration;

(2) manage the implementation of the Transport Information System (TIS);

(3) co-ordinate and liaise with other branches in Transport Department, other government departments, transport operators, system suppliers/integrators and service providers for the implementation of ITS including TIS;

(4) plan and implement the provision of Traffic Control and Surveillance Systems on existing and future Strategic Road Network under major road projects;

(5) provide advice and guidance for the development of Information Technology (IT) in Transport Department;

(6) supervise the effective use and maintenance of existing information systems and infrastructure in Transport Department;

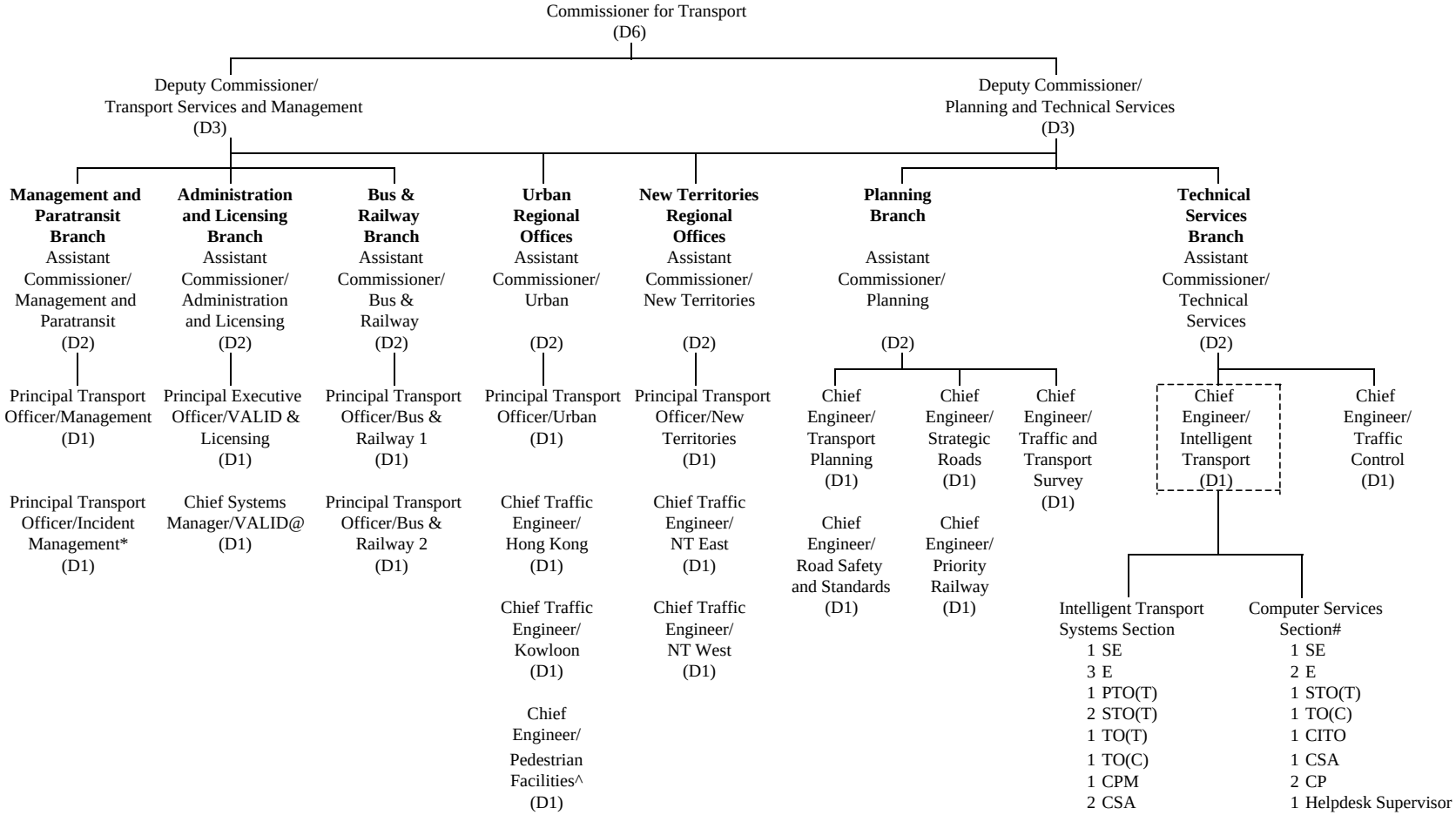
(7) plan and co-ordinate resources for new initiatives of ITS and IT applications;

(8) consult Transport Advisory Committee, Legislative Council Panel on Transport and other concerned parties, and attend meetings as necessary, on the recommendations of the ITS Strategy Review; and

(9) oversee the administration of the Intelligent Transport Division.

Enclosure 4

Existing and Proposed Organisation Chart of the Transport Department



Legend:

[ ] Supernumerary CE post proposed to be retained up to 21 June 2008

* Supernumerary PTO post created under delegated authority from 26 September 2005 to 25 March 2006

@ Supernumerary CSM post created under delegated authority from 1 January 2006 to 30 June 2006

^ Supernumerary CE post created for 5 years from 6 July 2001 to 5 July 2006

\# The Computer Services Section and Infrastructure Section will be placed under the Chief Engineer/Intelligent Transport w.e.f. 22 June 2006.

SE	Senior Engineer	CITO	Contract Information Technology Officer
E	Engineer	CSA	Contract Systems Analyst
EE	Electronics Engineer	CP	Contract Programmer
PTO(T)	Principal Technical Officer (Traffic)	ACO	Assistant Clerical Officer
STO(T)	Senior Technical Officer (Traffic)	CA	Clerical Assistant
TO(T)	Technical Officer (Traffic)	OA	Office Assistant
TO(C)	Technical Officer (Civil)	TSA I	Transport Services Assistant I
SSM	Senior Systems Manager	VALID	Vehicles & Drivers Licensing Integrated Data
CPM	Contract Project Manager	NT	New Territories