

2011年人口普查電腦設備和服務 Computer Equipment and Services for the 2011 Population Census

二零零九年五月四日
4 May 2009



Purpose 目的

- 為了告知各委員，政府當局建議開立為數85,273,000元的新承擔額，為政府統計處(統計處)進行的2011年人口普查購置所需的電腦設備和僱用服務。

To brief Members on the Administration's proposal to create a new commitment of \$85.273 million for acquiring the computer equipment and services required for the 2011 Population Census.



背景 Background

- 人口普查/中期人口統計系列

Population Census/By-census series

- 人口普查Population Census : 1961 , 1971 , 1981 , 1991 , 2001 , 2011
- 中期人口統計Population By-census : 1966 , 1976 , 1986 , 1996 , 2006

- 目的: 搜集本港人口的社會和經濟特徵, 以及按地區分布的最新基準資料

Aim: To obtain up-to-date benchmark information on the socio-economic characteristics of the population and on its geographical distribution

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背景 (續) Background (Cont.)

- 在2009年1月5日的會議中, 向委員簡報2011年人口普查的籌劃工作, 包括為支援2011年人口普查擬設的電腦系統。

At the meeting on 5 Jan 2009, Members were briefed on the planning work for the 2011 Population Census (11C), including the proposed development of computer systems to support its operation.

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理由 Justification

2011年人口普查的電腦支援 Computer Support for the 11C

- 2011年人口普查是一項大規模和複雜的工作
The 11C is a large-scale and complex operation
 - 須招聘及培訓約20 000名臨時外勤工作人員
recruitment and training of some 20 000 temporary field workers
 - 於45天的資料搜集期內點算約237.6萬個住戶
enumeration of around 2.376 million households during the 45-day data collection period

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理由 (續) Justification (Cont.)

- 2011年人口普查將會引用新的多模式資料搜集方法
A new multi-modal data collection approach will be introduced in the 11C
- 除傳統的面談訪問外，利用新的方法進行住戶點算工作
New means for data collection in addition to traditional face-to-face interview
 - 郵遞問卷以便自行填報
delivery of questionnaires by post for self-enumeration
 - 互聯網自行填報方式
self-enumeration over the Internet

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理由 (續) Justification (Cont.)

- 需要一套整合的電腦系統，以配合新的多模式資料搜集方法及其他系統改善措施。

An integrated computer system is needed to tie-in, among other enhancements, with the new multi-modal data collection approach.

- 已進行了可行性暨業務程序重組研究，以探究所需系統的技術性要求及在財務和資源上的需要及尋找可精簡整個2011年人口普查流程和改善的機會。

A feasibility cum Business Process Re-engineering (BPR) study was conducted to examine the technical requirements, financial and resources implications of the required system, and explore opportunities to streamline the whole process and identify improvement opportunities of the 11C.



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理由 (續) Justification (Cont.)

擬設的2011年人口普查電腦系統

Proposed Computer System for the 11C

- 可行性暨業務程序重組研究建議

The feasibility cum BPR study proposed to

- 應盡量再使用為2006年中期人口統計發展的電腦系統
re-use the computer systems developed for the 2006 Population By-census (06BC) to the extent possible
- 重新發展／提升2006年中期人口統計的系統，以迎合2011年人口普查的轉變要求
re-develop/upgrade the 06BC systems to meet the changing requirements of the 11C



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理由 (續) Justification (Cont.)

- 增強2006年中期人口統計電腦系統中2個子系統的功能
enhance two sub-systems of the 06BC
 - 重新發展2006年中期人口統計電腦系統中的14個子系統
re-develop the other 14 sub-systems of the 06BC
 - 發展2個全新的子系統
develop two new sub-systems
- 以組合方式建立的2011年人口普查電腦系統能確保採用最具成本效益的方案
The 11C computer system is established using the combination approach to ensure that the most cost-effective solution is adopted



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理由 (續) Justification (Cont.)

2011年人口普查電腦系統的新功能

New Functions of the 11C Computer System

- 擬設的電腦系統將加入以下的新功能／特色

The following new functions/features will be added to the proposed computer system

- 每天審核搜集的數據，以提高數據的準確程度，並作出加緊覆核的建議。
Collected data will be validated daily to improve data accuracy, with suggestions to enhance checking.
- 透過在互聯網上建立聯線電子招聘模式，以改善招聘及培訓程序的效率。
Implementing the on-line e-Recruitment module to improve efficiency of recruitment and training processes.



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理由 (續) Justification (Cont.)

- 利用智能字元識別技術記錄普查工作的進度，以縮短處理時間。從而改善外勤工作的效率。

Capturing the enumeration progress with Intelligent Character Recognition (ICR) technology, so as to shorten the processing time. It improves the field operational efficiency.

- 推行電子填報機制，令受訪者能夠使用該聯線系統接連和填報電子問卷。 Respondents can make use of the on-line system to access and complete the e-questionnaires.

- 建立一套工序流程系統，及設立載有指引的儲存庫，以改善事故的處理及報告。

Setting up workflow functions and establishing a repository comprising guidelines to enhance the incident handling and reporting.

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理由 (續) Justification (Cont.)

- 增強問卷追蹤機制，設立中央系統以確保準確和快速地追蹤經不同運作程序填妥的問卷。以協助追蹤已交回問卷的情況和避免問卷在運送途中遺失。

Strengthening the questionnaire tracking mechanism. Establishing a central system to enable accurate and rapid tracking of completed questionnaires across different operations. This will help track the status of returned questionnaires and avoid any loss of questionnaires during transit.

- 增強素質保證機制，以更有效率及具效益地抽選可疑個案、覆核“未能接觸”的個案及分析查核結果。

Enhancing the quality assurance mechanism for more efficient and effective selection of dubious cases, review of “non-contact” cases and analysis of checking results.

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理由 (續) Justification (Cont.)

確保所收集數據素質的措施

Measures to ensure quality of the collected data

- 就多個範疇進行設計上的廣泛諮詢
Extensive user consultations on various aspects of design
- 在試驗性統計調查／演練中將會徹底測試所有工作程序及問卷
Pre-test survey / dress rehearsal to test procedures and questionnaires thoroughly
- 最新的「屋宇單位抽樣框」
Up-to-date Frame of Quarters
- 詳細訪問部分的抽樣設計將根據科學原理設定
Sample design of the detailed enquiry part based on scientific principle

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理由 (續) Justification (Cont.)

- 所有臨時外勤工作人員將會接受足夠培訓及指引
Adequate training and guidance to temporary field workers
- 重訪從已填妥問卷中抽選的一個樣本，以查核已完成工作的素質及執行即時的強化措施
Re-visit a sample of the completed assignments for checking quality of the work completed and take immediate enhancement measures
- 初步審核已填妥問卷，並就有疑問的資料通知有關統計員進行即時跟進
Perform initial check on completed questionnaires and inform the enumerators concerned for prompt follow-up on dubious information
- 把所有問卷數據進行掃瞄輸入，從而減低人手輸入引致的錯誤
Scan data of all questionnaires to minimize human input errors

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理由 (續) Justification (Cont.)

- 使用數據處理系統，從收回的電子問卷中找出任何遺漏或疑點，從而可及時與受訪者進行跟進

Use a data processing system on e-questionnaires returned to identify any missing or dubious entries for prompt follow-up with the respondents

- 用電腦程式全面審核搜集所得數據。如有需要，將向受訪者核實有疑問的問卷

Validate collected data comprehensively using computer programs to identify dubious questionnaires for verification with respondents if necessary

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理由 (續) Justification (Cont.)

- 參照國際間建議的做法，在外勤工作過後進行一項查點後的覆核統計調查，為普查結果的統計評估提供獨立的參考資料

In line with international recommendation, conduct post enumeration survey to provide an independent reference for statistical review of census results

- 人口普查的結果在發布前將進行詳細的統計分析及全面的專業評估

Before release, the census results will undergo detailed statistical analysis and comprehensive professional review

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理由 (續) Justification (Cont.)

成本效益分析

Cost and Benefit Analysis

- 鑑於2011年人口普查工作規模龐大和複雜，倘若沒有高效率的電腦支援，實無法進行有關工作。

Given the large scale and complex operation of the 11C, it is impossible to conduct the census without efficient computer support.

- 擬設的電腦系統在一筆過的減省行政費用和減免開設額外職位這兩方面開支上，應可節省6,407,000元。

The proposed computer system will achieve notional savings of \$6.407 million in terms of one-off administration cost savings and cost avoidance for additional posts.

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理由 (續) Justification (Cont.)

- 擬設的電腦系統能幫助實行新的多模式資料搜集方法

The proposed 11C computer system will make the new multi-modal data collection approach possible with:

- 受訪住戶的數目會由2001年人口普查的205.3萬戶增至2011年人口普查的約237.6萬戶

The no. of households to be enumerated would be increased from 2.053 million in 01C to around 2.376 million in the 11C

- 應用新的多模式資料搜集方法後，2011年人口普查所聘用臨時外勤員工的數目將會較2001年人口普查減少約3 000名

With the implementation of the new multi-modal data collection approach, the no. of temporary field workers employed will be trimmed by some 3 000 in the 11C when compared with 01C

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理由 (續) Justification (Cont.)

2011年人口普查電腦系統的日後用途 Future Use of the 11C Computer System

- 為了使投資得到最大效益，在完成2011年人口普查工作後，擬設的電腦子系統均會以不同形式繼續在統計工作上使用。
To maximise the return of investment, various computer sub-systems will be retained for use in various ways after the 11C operation.
- 2011年人口普查擬設的18個電腦子系統中的6個會馬上被重新調配，供普查後期工作或統計處其他工作使用。
6 of the 18 sub-systems of the 11C will be immediately redeployed to meet the needs of the Census at the later stages or needs of other programmes in C&SD.



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對財政的影響 Financial Implications

非經常費用 Non-recurrent cost

- 實施有關建議所需的非經常費用為85,273,000元，用以購置電腦硬件、軟件和僱用有關服務。
Implementation of the proposal will incur a non-recurrent cost of \$85.273 million for the acquisition of computer hardware, software and related services.
- 而所需的非經常員工費用為5,066,000元，統計處會通過內部資源調配以支付所需款項。
The non-recurrent staff cost of \$5.066 million will be absorbed through internal re-deployment of resources in C&SD.



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對財政的影響 (續)

Financial Implications (Cont.)

經常費用 Recurrent cost

- 在計劃進行期間所需的電腦保養開支已包括在該計劃的非經常費用內

The maintenance cost of the computer equipment during the project period has been included in the project non-recurrent cost

- 在計劃完成後所需的電腦保養開支則經由統計處通過內部資源調配予以支付

The recurrent maintenance cost beyond the project period will be absorbed by C&SD



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計劃的推行 Implementation Plan

<u>主要工作</u> Major Activities	<u>開始日期</u> Start Date	<u>完成日期</u> Completion Date
招標及採購 Tendering and Procurement	2009年6月 June 2009	2010年3月 March 2010
系統設計及發展 System Design and Development	2009年6月 June 2009	2011年3月 March 2011
系統測試及完善微調 Trial Run and Fine-tuning	2010年6月 June 2010	2010年12月 December 2010
用戶驗收測試 User Acceptance Test	2009年11月 November 2009	2011年5月 May 2011
人口普查外勤工作 Census Field Operation	2011年6月 June 2011	2011年8月 August 2011
數據處理及摘要結果發布 Data Processing and Dissemination of Summary Results	2011年7月 July 2011	2012年2月 February 2012
其他普查結果的編製及發布 Production and Dissemination of Other Census Results	2012年3月 March 2012	2013年3月 March 2013

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- 計劃將這建議於2009年6月5日提交財務委員會要求批准有關建議

Plan to submit the proposal to the Finance Committee for approval on 5 Jun 2009



完
End

