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Panel on Education

**Background paper prepared by the Legislative Council Secretariat
for the meeting on 8 May 2006**

**Implementation of a centralised onscreen marking system
by the Hong Kong Examinations and Assessment Authority**

Purpose

This paper summarises the discussions of the Panel on Education and the Finance Committee on the implementation of a centralised onscreen marking system by the Hong Kong Examinations and Assessment Authority (HKEAA).

Background

2.   HKEAA is an independent statutory body established in May 1977 under the Hong Kong Examinations and Assessment Authority Ordinance (Cap. 261). HKEAA was formerly known as the Hong Kong Examinations Authority (HKEA).   In July 2002, when the function of HKEA was widened to cover the administration of assessment, its name was changed to HKEAA.   The statutory responsibility of HKEAA is to plan and conduct the Hong Kong Certificate of Education Examination (HKCEE) and the Hong Kong Advanced Level Examination.   On behalf of overseas examining bodies and local professional bodies, it also administers various examinations leading to academic, professional or practical qualifications, including the London Chamber of Commerce and Industry Examinations, the Associated Board of the Royal Schools of Music Examinations, and the Test of English as a Foreign Language Examination.

3.   By virtue of the passage of the Hong Kong Examinations and Assessment Authority (Amendment) Bill 2003 in November 2003, HKEAA is empowered to conduct, on its own or jointly with others, examinations and assessment in or outside Hong Kong.

4.   HKEAA is governed by a Council appointed by the Chief Executive. HKEAA Council is responsible for formulating examination policies and monitoring the work of HKEAA.   It consists of 17 persons including six ex-officio members.   The Education and Manpower Bureau is represented on the Council and two of its committees.   HKEAA operates on a self-financing basis and does not receive any recurrent subvention from the Administration. HKEAA is required to submit its annual estimates of income and expenditure (including proposed examination fees), and a programme of its proposed activities to the Administration for approval.

5.   HKEAA Council commissioned a consultant in 2002 to conduct a strategic review of its functions and capability, and to identify the necessary changes to enable it to better fulfil its roles and functions.   The Strategic Review Final Report was completed in May 2003.   The Review Report recommended, among other things, that there was an immediate need for the Government to fund the assessment development activity over the next five years, given the financial constraints of HKEAA.

6.   In February 2004, HKEAA was given a one-off grant of $136.7 million to support its assessment development, policy and research activities for about five years until 2009.   The funding enabled HKEAA, among other things, to conduct studies including a study on the feasibility of on-line marking of scripts and implementation of on-line marking for a few subjects.

Deliberations of the Panel and the Finance Committee

Meetings

7.   The Panel held two meetings on 12 September and 14 November 2005 to discuss measures to improve the administration of public examinations and modernise the examination systems of HKEAA, including the introduction of centralised onscreen marking.   On 2 December 2005, the Finance Committee approved a capital grant of $198.87 million to support the modernisation and development of HKEAA's examination systems.   The deliberations of the Panel and the Finance Committee on issues relating to centralised onscreen marking are summarised in the following paragraphs.

Need for onscreen marking

8.   Some members had sought information on the reasons for introducing onscreen marking.   These members considered that HKEAA should examine the time taken and costs for implementing electronic scanning of scripts, and conduct the necessary quality assurance and risks assessments before the adoption of a new system for examination administration.

9.   HKEAA explained that it had established an external Review Committee in March 2005 to conduct a thorough review of its information systems and services.   The Review Committee submitted its final report in August 2005. The report identified a number of ways to improve the examination systems and services, including the establishment of electronic scanning facilities and onscreen marking centres for centralised marking of examination scripts to improve the administration of examinations and reduce the risk of missing scripts.   HKEAA attached great importance to running reliable examination results, and would implement the new system only after full assurance of quality and comprehensive assessment of risks.

Schedule of implementation

10.   According to the schedule of implementation, HKEAA would develop the new computer systems for on-line marking of the Chinese Language and English Language papers starting from the 2007 HKCEE, and extend the use of the systems to other subjects on a progressive basis.   Onscreen marking and examination processing centres would need to be established with systems and equipment in place by 2007 in order to enable HKEAA to build up sufficient experience for a smooth transition to full implementation for the new Hong Kong Diploma of Secondary Education in 2012.

11.   Some members urged HKEAA to facilitate the implementation of onscreen marking through speeding up the establishment of centralised marking centres.   They also urged the Administration to simplify the administrative procedures for identification and allocation of suitable venues for the establishment of centralised marking centres in order to speed up the implementation process.

12.   HKEAA explained that implementation of onscreen marking was a major cultural change in script marking which needed to be thoroughly tested. HKEAA would conduct a pilot run on onscreen marking of scripts starting March 2006.   The results of the pilot run would provide useful information for the refinement of procedures and operations as well as hardware and software requirements which would be carried out in June to September 2006.   The installation and testing of the onscreen marking system in selected centralised marking venues would be carried out before March 2007, in preparation for onscreen marking of Chinese Language and English Language in the 2007 HKCEE.   HKEAA would extend onscreen marking to other subjects in HKCEE and Hong Kong Advanced Level Examination, having regard to the results of onscreen marking for the two subjects, and would adjust the implementation schedule in the light of experience.

Number and location of centralised marking centres

13.   Members noted that two vacated school premises in Tsuen Wan and Lai King had been identified for conversion into centralised marking centres. Some members considered that the two locations were not convenient to markers residing in New Territories East and Hong Kong Island, and requested the Administration to provide more marking centres.

14.   The Administration explained that it would endeavour to provide more centralised marking centres at convenient locations, subject to the availability of vacated school premises for conversion.   It was the intention of the Administration to provide centralised onscreen marking centres in the New Territories East, Hong Kong Island and Kowloon East, accommodation of which would have to be made available for conversion in mid-2006 so that these centres would be ready for trial by January 2007.   In the event of slippage in the provision of longer-term accommodation, HKEAA was prepared to lease commercial premises to make up for the space shortfall.

15.   As regards members' enquiry on the feasibility of implementing onscreen marking without establishing centralised marking centres, HKEAA explained that the provision of centralised marking centres would enhance security and supervision of the marking process.   It would also facilitate the provision of timely professional support to markers and interactions between markers and the chief examiners in the marking process.   Overseas experiences had indicated that onscreen marking conducted by markers at their chosen locations was unsatisfactory.

Reliability of digital scanning and onscreen marking

16.   Some members were concerned about the reliability of digital scanning and onscreen marking.   They urged that HKEAA should make sure that the onscreen marking system was perfectly reliable before implementation, given the importance of public examination results to candidates in pursuing further studies or finding employment.   They requested that appropriate contingency plans should be formulated to cater for any failure of the onscreen marking system.

17.   HKEAA explained that some 14 to 15 cities and provinces in the Mainland had practised onscreen marking for their public examinations for many years.   The United Kingdom had started onscreen marking recently.   The implementation experiences in these places showed that the reliability of digital scanning with the use of appropriate equipment and paper was almost 100%. HKEAA had set up a working group (the working group) to work out contingency plans, including manual marking in case of system failure, and would make reference to the experiences in other places in the course of developing the onscreen marking system.

Training for markers

18.   Some members enquired how HKEAA would familiarise markers with the operations of the onscreen marking system and enhance candidates' confidence in the reliability of onscreen marking.   HKEAA pointed out that teachers might initially have reservations about onscreen marking of scripts at centralised marking centres.   However, experiences in other places had indicated that teachers would prefer onscreen marking to manual marking when they became familiar with the features and operations of onscreen and centralised marking.   HKEAA would ensure that the operations of the onscreen marking system were simple and user-friendly.   HKEAA would organise sufficient training for markers before implementation.

19.   As regards the mechanism for monitoring markers' performance, HKEAA explained that specific training for individual examinations would be given to the markers.   Onscreen marking would enable the chief examiners to perform real-time monitoring of the entire marking process such that a marker with unsatisfactory quality of marking would not be allowed to continue marking, and the scripts which had already been marked by the marker would be re-marked. A marker who was found to be too harsh or too lenient in his/her marking and failed to make improvement would not be employed again.

Impact on candidates and teachers

20.   Some members were concerned about the impact of onscreen marking on candidates taking Chinese Language and English Language in the 2007 HKCEE. They noted that candidates might be required to affix barcode labels onto their examination scripts.   These members pointed out that under tremendous pressure at examination centres, candidates might fail to follow correctly the instructions of the examination centre supervisors.

21.   HKEAA explained that HKEAA would provide sufficient information and training to examination centre supervisors and invigilators on the procedures and instructions for candidates to affix barcode labels onto their examination scripts.   HKEAA would arrange teachers and students to participate in trial runs in February 2006.   HKEAA would also liaise with the Government Logistics Department to explore the feasibility of printing examination scripts with the necessary barcode for the 2007 HKCEE.

22.   As regards some members' concern about the time required for markers to travel to the marking centres and the need to use computers, HKEAA explained that a pilot run on onscreen marking would be conducted in March and April 2006.   Based on the results of the pilot run, HKEAA would further refine the policy and procedures on onscreen marking, taking into account overseas experience. Sufficient rest intervals would be provided to markers so that they

would not be over-strained.   The working group would look into related issues including difficulties which might be encountered by markers in onscreen marking.

Costs

23.   Some members were concerned about the costs for implementing centralised onscreen marking, which were estimated to be around $102 million. They noted that these costs were higher than the costs of similar projects undertaken by the Mainland.

24.   The Administration explained that a direct cost comparison between the Mainland and Hong Kong on the provision of onscreen marking might not be appropriate because the systems and capacities in the Mainland were different. In the Mainland, universities were used as examination centres and police officers were deployed to supervise and ensure security of examination operations.   As for Hong Kong, heavy investment had to be made in the provision of centralised onscreen marking centres.   Moreover, as the information technology infrastructure for onscreen marking was relatively new, a consultant had to be engaged to work out the tender specifications before tendering.

Relevant papers

25.   A list of the relevant papers on the Legislative Council website is in the **Appendix**.

Council Business Division 2
Legislative Council Secretariat
4 May 2006

**Relevant papers on
implementation of a centralised onscreen marking system
by the Hong Kong Examinations and Assessment Authority**

Date of meeting	Meeting	Minutes/Paper	LC Paper No.
15.12.03	Panel on Education	Minutes of meeting	CB(2)1102/03-04
		Paper entitled "Government Funding to Support the Assessment Development, Policy and Research Activities of the Hong Kong Examinations and Assessment Authority"	CB(2)634/03-04(01)
20.2.04	Finance Committee	Minutes of meeting	FC63/03-04
		The Administration's paper entitled "Grant to Support the Assessment Development and Research Activities of the Hong Kong Examinations and Assessment Authority"	FCR(2003-04)58
27.2.04	Finance Committee	Minutes of meeting	FC72/03-04
		The Administration's paper entitled "Grant to Support the Assessment Development and Research Activities of the Hong Kong Examinations and Assessment Authority"	FCR(2003-04)65
		The Administration's paper entitled "First Annual Progress Report of the Use of the Grant to Support the Assessment Development and Research Activities of the Hong Kong Examinations and Assessment Authority"	FCRI(2005-06)6

Date of meeting	Meeting	Minutes/Paper	LC Paper No.
12.9.05	Panel on Education	Minutes of meeting	CB(2)228/05-06
		Paper entitled "Review of the incident involving misreporting of 2005 HKCEE English Language (Syllabus B) Oral paper results"	CB(2)2538/04-05(01)
14.11.05	Panel on Education	Minutes of meeting	CB(2)585/05-06
		The Administration's paper entitled "Grant to support the modernization and development of the Hong Kong Examinations and Assessment Authority's examination systems"	CB(2)323/05-06(01)
2.12.05	Finance Committee	Minutes of meeting	FC22/05-06
		New Item "Grant to support the modernisation and development of the examination systems of the Hong Kong Examinations and Assessment Authority"	FCR(2005-06)33
		Supplementary Note on "Grant to support the modernisation and development of the examination systems of the Hong Kong Examinations and Assessment Authority"	FC15/05-06

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