

# Replacement and Enhancement of the High Performance Computing System of the Hong Kong Observatory

**[FCR (2006 – 07)43]**

## Supplementary Note

### Purpose

This note addresses the questions raised by the Chairman of the Finance Committee regarding the improvement to be achieved by the proposed high performance computing (HPC) system and the accelerated implementation timetable.

### Quantification of the Improvements Achieved

2. We indicate, vide paragraph 6 of the paper to the Finance Committee [FCR (2006-07)43] (Paper), that new Numerical Weather Prediction (NWP) models taking advantage of advances in computing technology have been developed in the past few years. With the proposed HPC system, we plan to run a new NWP model that offers the following benefits:

#### A suite of more refined models with enhanced resolutions

	Existing System	New System
<b>Smallest grid achievable</b>	20-km grid	2-km grid
<b>Maximum number of pixels covering Hong Kong and vicinity</b>	9 (3 x 3) pixels	900 (30 x 30) pixels
<b>Maximum vertical division of atmosphere (for the smallest grid achievable)</b>	36 layers	60 layers

#### More frequent model runs

Domain coverage	Existing System	New System
<b>Central Asia and</b>	Every 6 hours	Every 3 hours

<b>northern part of western Pacific</b>		
<b>Pearl River Delta</b>	Not available	Every 1 hour

Provide meteorological information of a better quality

<b>Meteorological Information</b>	<b>Existing System</b>	<b>New System</b>
<b>Computer-generated weather forecast charts for internet users</b>	60-km resolution (updated twice per day)	20-km resolution (updated 4 times per day)
<b>Regional temperature forecasts for the public</b>	Not available	New

3. With the proposed new system, the HKO expects to increase its performance target in “accurate public forecast as verified by objective means” from the existing 85% to 87%.

### **Accelerated Implementation Timetable**

4. We indicate, vide paragraph 24 of the Paper, that we have advanced the implementation timetable by six months in light of the views of the Legislative Council Panel on Economic Services. The compressed timetable is to be achieved through internal re-prioritization of work especially with arrangements made to carry out site preparation and power capacity upgrading works concurrently. As the above involves only internal re-prioritization of work, no increase in project cost is envisaged.

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