Doc T-22/ 20-3

STATUS REPORT

Organisation:	Radio Television Hong Kong (RTHK)		
Period:	Nov 2021 to Oct 2022	Date of Report:	7 Nov 2022

PART A

Technical Developments during the past year:

- System upgrades/changes to practices for improved quality/efficiency

1. Completion of the migration of DTT frequency channel 62 to channel 27 to spare the higher frequencies for mobile communication
2. Dismantlement of an aged and seriously deteriorated 92-meter height AM antenna mast by means of controlled-fall approach
3. Replacement of aged power systems and lightning protection systems at 5 DTT/FM radio transmitting stations
4. Replacement of 3 pairs of aged 1+1 FM transmitters and an aged FM antenna array at principal transmitting stations to improve the service reliability of RTHK's FM broadcasting service
5. Deployment of Augmented and Virtual Set system with object tracking system to increase the flexibility and creativity in TV studio production
6. Upgrade of the lightings in the largest TV studio to LED lightings for quality improvement and energy saving
7. Deployment of 100Gbps/40Gbps network infrastructure for video editing and radio production
8. Upgrade of the video news production workstations to 10Gbps network
9. Upgrade of the mobile video link equipment from 4G to 5G
10. Expansion of the capacity of the multi-media asset management system
11. Upgrade of the radio studio in town centre with video production capability and hybrid audio mixing system for live broadcast
12. Upgrade of the video resolution of TV online live and video-on-demand streaming services on RTHK website and mobile app RTHK SCREEN from 720p to 1080p
13. Completion of the centralized logging system to analyze server and network log activities in the automation of daily system security management and threat detection
14. Completion of the set-up of remote access SSLVPN platform for accessing internal resources to better fit the policy and implementation requirements

- New Services/new projects initiated

1. 8K production/post production and broadcast via social media platform
2. Broadcast of a new FM channel (CNR "The Greater Bay") with an initial population coverage of 20% at one of the seven principal stations in Hong Kong
3. Setup of a new DTT programme channel (RTHK TV34 – CCTV "CGTN") via the existing DTT frequency channel
4. Establishment of a new DTT broadcast network at 29 transmitting stations for providing additional DTT programme channels.
5. Development of a new presentation system to monitor and operate all channels relayed from other broadcasters
6. Development of using internet communication protocol (RTMP/SRT) to support video transmission among broadcasters and content providers

7. Replacement of the aged radio playout system, audio routing system, digital audio workstations and storage system with enhanced features
8. Development of analogue audio production studio for fine music production
9. Capacity expansion of the web interview workstations
10. Replacement of DDoS mitigation solution to confront different types of DDoS attacks protection against emerging network multi-vector attacks and cyber-attacks
11. Upgrade of the RTHK News portal and publishing system
12. Setup of the Digital Rights Management system to prevent unauthorized access, copying and re-distribution of RTHK digital contents

- Research projects

1. 8K programme distribution via Smart TV
2. 5.1 surround sound broadcast via DTT

- Internet and Mobile Broadcasting Services

1. Setup of live streaming service of a new radio channel – CNR "The Greater Bay" on RTHK website and RTHK mobile apps
2. Enhancement of RTHK website and mobile apps to incorporate a new TV channel – CCTV "CGTN" and radio channel – CNR "The Greater Bay"
3. Enhancement of the user interface of the mobile app RTHK SCREEN for improved navigation with a new look and feel

			Radio	Television
Coverage %			99% (AM/FM)	99% (DTT)
Programme Channels			4 (FM) 4 (AM)	4 (DTT, High Definition)
Studios	File-based Set-up	R/N/D	R	
	SDTV	R/N/D		N/A
	HDTV	R/N/D		R
	UHDTV			N
	IP Based Set-up	R/N/D		N
Transmitters	HF	R/N/D	N/A	
	MF	R/N/D	R	
	FM	R/N/D	R and N	
	TV	R/N/D	N/A	R and N
	OTT/IBB/Internet Services	R/N/D	R	R
	Mobile Services	R/N/D	R	R

R = Replacement/upgrade   N = New   D = Discontinued

	Activities	Area	Brief Details: 1. Objectives 2. Progress to date	Challenges/Problems Faced: 1. Lack of resources 2. Lack of know-how 3. Others (e.g. up-skilling)	Solutions Implemented/Type of assistance requirement from ABU
1.	Development projects/Upgrading facilities/Training	Production ICT Infrastructure	• Conduct security risk assessment and audit for existing IP/network based broadcasting systems • Enhance knowledge of staff on cyber security	• Insufficient manpower and know-how to support the implementation of risk assessment and compiling the necessary related documentations	• Sought the support from management for budget requisition • Assigned dedicated staff to attend related training and take up the security related tasks
		Production ICT Infrastructure	To reinforce cyber security of Production ICT Infrastructure	• Lack of manpower to keep track of security alerts and necessary security patches to be applied	• Outsource security monitoring services for identification of risks, measuring exposure to threats and assessment of the level of security
		8K production and distribution	Establish a 8K production line and develop applications on 8K Smart TV via OTT distribution platforms	Insufficient resources and technical know-how	• Sought the support from management for budget requisition • Assigned dedicated staff to attend related training
		DTT broadcast network	Establish a new DTT broadcast network for providing additional DTT programme channels	• Very short lead time to provide service • Very limited manpower • Disruption in Global supply chain causing long delay for equipment delivery	• Reshuffled existing spare resources for interim deployment • Closely cooperated with suppliers and contractors in arranging partial delivery of equipment

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2.	Participation in ABU Activities	Area	Level of Participation	Reasons for not participating (though interested)	
		ABU webinar series on different technology topics	Audience		
3.	Suggestions for New ABU Activities e.g. study topic projects, workshops, symposiums etc, spectrum activities, new technology information flows	Provide webinars/on-line demonstration to introduce the application of Artificial Intelligence in broadcasting			
		Provide on line technology sharing/forum for recent development of protecting broadcasting systems against cyber attacks			
		Activity 3			