

Preliminary Incident Report on Fibre Cable Damage **On 13 April 2012**

Executive Summary

On 13 April 2012, at approximately 15:45 three (3) cross-harbour fiber cable routings in the Causeway Bay Typhoon Shelter Section were damaged by a construction contractor (i.e. China State Construction Engineering (HK) Limited) employed by the Highways Department for the Central – Wan Chai Bypass Tunnel project.

The incident was detected by our Network Operations Centre (NOC) and we immediately sent engineering teams out into the field to locate the exact location of the cable cut. We also began diverting traffic via other routes to minimise any customer impact, and alerted frontline staff so that they could better respond to customer inquiries. In addition we posted a message on our facebook customer service page and responded to media inquiries. We updated our messages on this incident as new facts came to hand.

We estimate that about 4,000 active consumer broadband customers in the NT West region were affected, with the primary effect being slow service rather than a total loss of service. About 150 active NowTV customers were also impacted. We estimate that about 9,000 active commercial broadband and 4,500 One Communications customers were also affected. By 19:15, over 90% of both commercial and residential broadband services had been restored to normal service.

We are very disappointed that this incident occurred despite our efforts to warn the Central – Wan Chai Bypass Tunnel project of the proximity of our infrastructure and the risks that their works posed. Before the project, HKT provided the project owner, consultants and concerned contractors with our plant marking information in accordance with excavation guidelines. We also offered on-site assistance upon request. The main contractor held coordination meetings with concerned parties to discuss work details before the project was commenced. The main contractor should have located and protected the existing underground facilities before the excavation. It is regrettable that our efforts were ignored and in the event our customers suffered inconvenience and service disruption.

Date and time of the outage incident:

On 13 April 2012 between (approximately) 15:45 and 19:15.

Location and cause of the incident:

Three cross-harbour fiber cable routings were damaged by a construction contractor (i.e. China State Construction Engineering (HK) Limited) employed by the Highways Department for the Central – Wan Chai Bypass Tunnel project.

The 3 damaged fibre cable routings were Lockart to Mongkok (LKT-MKK), Jordan to Telecom House (JDN-THT) and Hung Hom to Victoria (HHM-VTA). The

physical fibre cable damage occurred at Hung Hing Road in Causeway Bay in the Causeway Bay Typhoon Shelter Section (see attached location map).

Actions taken and time of restoration of services:

Event log of the incident on 13 April 2012:

15:45	Our Network Operation Centre (NOC) detected system alarms and cable breakage. We quickly identified the fault location was at Hung Hing Road, Causeway through our Automatic Cable Monitoring System ^(Note) .
16:05	Identified the impact and we immediately started to divert traffic
16:10	HKT engineers called the Main Contractor – i.e. China State Construction – to stop all site works immediately.
16:30	HKT engineers arrived at the construction site and confirmed with China State Construction that boring work had been carried at the fault location (see attached photo).
18:45	Diversion of commercial broadband traffic completed and service resumed.
19:10	Diversion of residential broadband traffic completed and service resumed.
22:19	LKT-MKK cable route repair completed
00:26 (14 Apr)	JDN-THT cable repair completed.
01:15 (14 Apr)	HHM-VTA cable repair completed.

Note – HKT has invested in automatic cable pressurization and optical cable network monitoring systems for alarm/pressure detection and speedy location of cable damages – it is clear that without these systems it would have taken longer to identify that damage had occurred and the subsequent identification and repairs would also have taken much longer.

After working through the night of Friday 13 April 2012 HKT’s engineers and technical staff were able to fully restore the network so that everything was back to normal before Saturday’s traffic loads hit the network.

Types and estimated number of customers affected:

The fibre cable damage affected residential broadband service to about 4,000 active customers mainly in NT West area. These customers may have experienced a slow response when using the service. About 150 active users of nowTV services in non-specific geographical locations were also affected.

The fibre cable damage affected commercial broadband services in non-specific geographical areas to about 9,000 customers who faced an Internet service outage. In addition, 4,500 active users of One Communication services were affected. The vast majority of the affected commercial broadband and One Communications services were restored to normal service by 18:45.

At 19:15, over 90% of both commercial and residential broadband services had been restored to normal service.

Future action

HKT will make a damage claim against the construction contractor. We will be reminding contractors as to their responsibilities and the importance of fully adhering to all road opening safeguards. We would appreciate OFCA's assistance in reminding contractors that they should always locate and protect existing underground facilities before the excavation. The contractors should contact us first before they start digging in places where our network is located.

Conclusions

1. This incident would never have happened if the contractor on the Central – Wan Chai Bypass Tunnel project had taken adequate precautions
2. Damage to the HKT network was substantial
3. Early detection and determination of the exact location of the cause of the damage was possible because HKT has invested in automatic cable pressurization and optical cable network monitoring systems for alarm/pressure detection
4. Traffic diversion was possible within HKT's network because of redundant routings and this helped to alleviate customer inconvenience and service impacts
5. Repairs were attended to promptly and services and the network were restored efficiently
6. Customer communications were appropriate
7. Clearly HKT regrets that its customers were affected by the actions of the contractor and we will remind contractors of their obligations to involve us whenever there is a danger that they put our network at risk. We would appreciate OFCA's assistance in reminding contractors and project owners of their obligations so that these sorts of incidents can be avoided.

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Damage Location

The image contains two maps. The left map is a site plan of Kellest Island showing various facilities like the Royal Hong Kong Yacht Club, Kellest Island, and several tunnels. A red dot marks the damage location on the Queens Highway Tunnel. The right map is a technical diagram of the tunnel section, showing two parallel cables labeled '12W' and a red dot indicating the 'Location' of the damage.

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Cable Damage by Boring Machine

The image contains three photographs. The left photo shows a large boring machine at a construction site with a worker in a yellow safety vest. A date stamp '13/04/2012' is visible in the bottom right of the photo. The top right photo is a close-up of the 'Boring Head' of the machine. The bottom right photo shows a 'Damaged Cable' that has been severed and frayed by the boring process.