

OFFICE OF HON JEREMY TAM  
立法會議員譚文豪辦事處

LC Paper No. CB(4)940/18-19(01)

May 27, 2019

(English version only)

Hon Yick Chi-ming,  
Chairman of the Subcommittee on Matters Relating to Railways, LegCo

Dear Mr. Yick,

**Questions relating to the MTR trains collision accident**

Two MTR trains collided near the Central Station on 18<sup>th</sup> March during system test. As a result, two trains were severely damaged and drivers were hospitalized. According to LegCo paper (LC Paper No. CB(4)687/18-19(03)), preliminary findings pinpointed that the signaling system had failed to prevent trains to run in conflicting routes, plus after the switchover to the back-up system, the safety inter-locking function of the back-up system was not effective as it should have. Both the MTRCL and EMSD are going to conduct further investigation on the accident.

With regards to the train collision accident, I would be grateful if the Government could answer the following questions:

1. Who are the overseas and local experts that are carrying out the further investigations? What are the qualifications and track records? What measures are taken to ensure these investigation entities are well qualified for such investigation? Does EMSD embrace any function safety standards in order to look into the matter with the appropriate perspective?
2. MTR requested a specification that the new signalling system must include a back-up system in addition to the main and stand-by systems in attempt to further improve the system's reliability and availability. Is such request from MTR based on proven experience or is it just a concept imagined by MTR to be a better architecture? How many such architecture has been implemented worldwide? If it is not a proven architecture, how can the vendor ensure the reliability of such system without proven track records? According to EN 50129, the signalling system must have the ability to detect internal inconsistency and force a failsafe response within a definite time frame. Has this "special" architecture been proven and certified to SIL 4 for use in a mass transit railway system?



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3. Has the train dispatch scenario that resulted in the collision involving two trains on March 18, 2019 been simulated in the laboratory with the same hardware switchover sequence or was the scenario only been tested in the software logic basis?
4. The report mentioned that all simulation tests have been validated internally and the reports approved by MTR before the tests can be carried out. How does MTR validate the methods and results in those reports and what measures are taken by MTR to ensure tests carried out onsite are based on the same conditions described in the reports? If the same test conditions were inputted to the simulator and resulted in the same crash result, then what are the differences between the test scenario that was supposed to be tested and the actual scenario that was executed in the test that resulted in the train collision?
5. For the switchover mechanism described, how is the data being synchronized between the main, stand-by and backup system? What mechanism is used to validate the data received by the backup system is the most current data?
6. Here mentioned that all tests were conducted strictly following International standards. What are the actual standards being employed?
7. Who is the Independent Safety Accessor employed? How did MTR qualify this accessor (track record, experience etc.)? Who is the "International Independent Consultant" being employed? How did MTR interact with these accessors and consultant? What questions or comments were being raised by these consultants and how were these open items being tracked to ensure they are properly dealt with?

It would be appreciated that if the Government could answer the above questions as soon as possible. Thank you.

Yours Sincerely,



Hon Jeremy Tam Man-Ho

Member of Legislative Council, HKSAR



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