DLR ACE exchange program - an unexpected experience

In order to further increase the reliability and to mitigate against obsolescence of the Dockland Light Railway (DLR) train detection system, it was decided to replace the existing 23 years old Thales L-90-3 technology with the Az LM system. Notably, on the track, the change will be visible due to the use of the most recent product, the SK30K sensors and EAK30K electronic units. Internally the change will be apparent by the extra space created in the equipment rooms by the reduction of relays and an enhanced diagnostic interface. Upgrading to Az LM will also provide additional axle counter system functionalities and will reduce the impact of system failures on the DLR operating system.

The upgrade to Az LM is planned to be done in engineering hours without any major closures of the DLR, therefore minimizing the impact on passengers. The new system will be installed in “Station Controller Migration Clusters” alongside the existing system and will be integrated using bespoke switchover cubicles. This will then allow the new system to be “over and backed” during engineering hours to facilitate the required testing.

System availability is a key DLR priority and any change is considered a potential risk. Usually for a good reason, the saying, “never change a running system” can hold some truth! With this in mind, Thales have performed a compatibility check on the existing Rolling stock of DLR, namely the Bombardier B92 and B2007 train sets with the new SK30K sensors with the EAK30K slim line electronic unit.

Two DLR-trains on West India Quay

The compatibility checks were carried out at Canning Town station. The setup comprised of two EAK30K sensors temporarily installed and the corresponding SK30K sensors clamped to the rail. The installation was run in shadow mode and had no operational responsibility or impact. Against the recommendation to install the sensor close to the traction rail due to personal protection and EMC concerns, it was decided to test this installation location as well. This was due to operational constraints during the migration from old to new which may make it necessary to use the un-favoured installation locations close to the traction rail.

Analysis of the measurement data showed that at both installation locations relative to the traction rail, the interference level of trains caused no disturbance to the Az LM outdoor equipment during monitored operating hours. This leads to the conclusion that the rolling stock type B92 and B2007 is compliant to Az LM outdoor equipment (EAK30K+SK30K) according to EMV04 under observed circumstances.

So in summary, the results of the session were as expected, however, the pleasant surprise came when the team did not encounter any rain during four days in a city where statistically it rains on 36% of days per year!