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The Importance of Drive Tests

Drive Tests are an important part of ongoing rail telecoms and signalling service assurance as well as of rail telecoms network acceptance. Comtest Wireless explains why.

What Are Drive Tests?

In summary, drive tests are an essential element in measuring and assessing mobile radio network coverage, capacity and quality of service (QoS), using specialist electronic equipment that measures mobile network air interface.

Drive test systems can therefore, collect and record information relating to a telecom network's service within the test geographical area. The results can be used to measure the QoS against pre-determined KPIs, as well as for diagnostics and troubleshooting.

Drive Tests for Rail Telecoms Network Acceptance

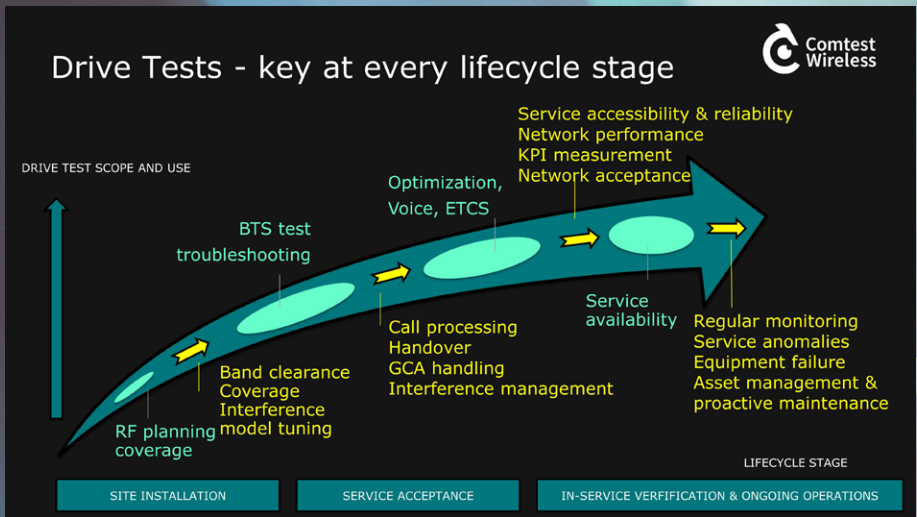
The initial test & measurement of a rail telecoms network normally takes place at the installation and acceptance stages, using a drive test system. Even before installing the network, drive tests are used to check if the frequencies to be used are affected by interference

from third parties (known as band clearance).

During the installation phase, first coverage and network accessibility tests are performed, which are followed by reliability testing, travelling across the network.

The key rail test specifications (Eirene SRS and FRS together with O-2875 and Morane) are normally carried out by telecom vendors but it is also key for railway operators to know exactly which specification/standard and service levels the network is compliant to as KPIs for voice may differ from data.

As drive tests are the most common way to gain network acceptance, it is easy to pigeonhole



One Size Drive Test Does Not Fit All

Rarely is there one perfect solution for all circumstances and the same applies to drive test systems. Comtest Wireless provides several options to suit, depending on the budget and drive test requirements.

Dedicated test trains or test wagons can provide the facility to permanently install drive test equipment, often as racks including options for unattended and remote management.

Alternatively, transportable solutions such as customised on-board units, equipment housed in a trolley or backpacks can often be more suitable.

For example:

- if tests need to be carried out less frequently (making a permanent installation not cost-effective)
- when using commercial trains (so equipment cannot be permanently installed)
- when tests must be conducted in multiple locations within a short space of time (so a test train is less practical)

In each case, it is important that the drive test system is designed to match the correct type of radio, scanner, power source, antenna connections, physical and other system requirements necessary to meet the specific type of test(s) required.

What Next?

If you have found this article useful, please contact shelley.robertson@comtestwireless.eu.

Drive Test data collection options

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Drive Test remotored solution (e.g. on dedicated trains)	Drive Test Portable (e.g. diagnostic and maintenance teams)	Unattended Fixed sub-rack (e.g. commercial trains)
Drive Test Transportable (e.g. diagnostic and maintenance teams)	Drive Test Sub-rack (e.g. lab, test plants)	

their use. However, many leading rail operators around the world regularly use drive tests for the whole of the railway operations lifecycle.

Ongoing Drive Tests for Operational Lines

After a network has been fully accepted, an ongoing network monitoring & troubleshooting routine should be established as an integral part of daily operations and maintenance. Critical situations can occur if there are issues with interference or equipment failure on operational railway lines. Based on operational experiences, an ongoing proactive maintenance or service assurance campaign is

highly recommended to ensure critical levels of quality and service are maintained, especially for rail networks operating ETCS level 2 signalling and above.

When systems fail, the ground-train communication can potentially cause train stoppage and delays. This can be critical when operating at high utilisation levels with many trains running every hour. The ability to source and pinpoint issues quickly, efficiently and effectively can be vital for maintaining continued train operations.

This ensures QoS standards and operational KPIs are met; not only giving service assurance but also making it easier to identify trends and areas of service degradation caused by interference, for example.

Testing & Monitoring ETCS Level 2 Operations with Comtest Wireless

How to save time and money with Comtest Wireless NetProbe Combined rail telecoms and signalling network performance monitoring.



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with confidence