

Category 1 Standard

S1227 Train System Performance Evaluation

Issue No.: A1

Issue date: September 2013
Review date: September 2018

MAYOR OF LONDON

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1 Purpose

- 1.1 The purpose of this Standard is to define the data required to support the performance evaluation process when applied to system designs which may potentially impact on Train System Performance.

2 Scope

- 2.1 This standard applies to all railway projects that change the data sets described in sections 3 to 9 below.
- 2.2 It should be noted that a change to the data sets does not automatically require Train System Performance evaluation to be undertaken. Train System Performance evaluation shall be undertaken only for those railway projects expected to have a significant impact on Train System Performance.
- 2.3 The Project Manager should make an assessment of the likely impact of the project works on Train System Performance. Where the impact is deemed to be significant the Head of System Performance should be informed. Where the Project Manager is unable to make an assessment, the Head of System Performance should be consulted.
- 2.3 When Train System Performance evaluation is requested, the scope and complexity of the evaluation to be undertaken for any railway project will be determined by the Head of System Performance.

3 Requirements - General

3.1 General

- 3.1.1 The Head of System Performance shall be responsible for the custodianship of the data sets that are used for Train System Performance evaluations and which reflect the capability of the railway.
- 3.1.2 The data sets held for the purpose of Train System Performance evaluation will be populated with data taken from data sets held by LU Head of Engineering's appointed representative for each engineering discipline and identified below.
- 3.1.3 Data sets held for the purpose of Train System Performance evaluation will be controlled and appropriate processes shall be applied when carrying out updates to the data sets.
- 3.1.4 Where data will be supplied in a form different from that defined in this standard, this different format should be agreed with the Head of System Performance.

4 Requirements - Track

4.1 General

- 4.1.1 The details of any track design, which changes the track performance, should be made available for the maintenance of data sets reflecting the Train System Performance of the railway.

4.1.2 The Head of Track Engineering should be responsible for the custodianship of infrastructure data sources used in the Train System Performance evaluation process. This data should include:

- The inter-station distance between stations;
- The gradient data;
- The $V_{\max}$ data;
- The position of traction current rail gaps.

4.1.3 All data should be supplied in metric units.

4.1.4 All data should be taken from a physical fixed datum point being the platform headwall, or if unavailable the virtual headwall, of the preceding station.

4.1.5 The use of other datum points should be discussed and agreed with the Head of System Performance.

4.1.6 A valid LCS code should be declared for the datum point used.

4.2 Line Data

4.2.1 Gradient data should be supplied in the direction of running as a percentage, marked as UP or DOWN gradient denoting a rise or fall, respectively.

4.2.2 Gradient data may be presented in either graphical or tabulated formats. As a minimum, the datum point, the value of gradients and the position (metreage) of the gradient change positions should be shown.

4.3 Maximum Permitted Speed – Design $V_{\max}$

4.3.1 The data should be produced in accordance with LU Category 1 Standard S1157: Track – Performance, Design and Configuration.

4.3.2 The use of design $V_{\max}$ data in Train System Performance evaluation should take into consideration the maximum length of the train that will operate in passenger service.

4.3.3 The design $V_{\max}$ data should also include maximum speed constraints imposed by vertical curves.

4.4 Speed Limits

4.4.1 The Speed Limit at any location should be the published Line Speed for the track unless a Permanent Speed Restriction (PSR) applies.

4.4.2 Speed Limits for each inter-station section, approved by The Head of Track Engineering, should be declared. Where appropriate a continuous track speed profile should be provided.

4.5 Permanent Speed Restriction Design – PSRs

4.5.1 The position and value for PSRs should be determined by examination of the Maximum Permitted Speed curve.

4.5.2 The position of PSRs should take account of signage constraints, for routes served by manually driven trains.