 https://doi.org/10.3311/PPtr.19186

Periodica Polytechnica Transportation Engineering, 49(3), p. 308, 2021

Corrigendum

László Lindenmaier, István Ferenc Lövétei, Gábor Lukács, Szilárd Aradi "Infrastructure Modeling and Optimization to Solve Real-time Railway Traffic Management Problems", 49(3), pp. 270–282, 2021. (in this issue)
https://doi.org/10.3311/PPtr.18582

When the above article was first published online some symbols in the text on pages 274–276, Table 7 on page 277, furthermore the subscript of the symbol *bs* in Eqs. (10), (11) and in the text on page 277 were incorrect. This has now been corrected in the online version. The correct version of some symbols in the text on pages 274–276, Table 7 on page 277, furthermore the subscript of the symbol *bs* in Eqs. (10), (11) and in the text on page 277 were published in this paper.

Corrected symbols on page 274:

The spatial coherence of the trains has to be ensured next to time coherence (see in Subsection 4.2) with the definition of connections and changes in the configuration of rolling stock of the trains. For example, train t could connect to train t' if train t' terminates at platform. In such case the start node of train t is automatically set to the corresponding platform. This requirement is applied for rolling stock configuration change as well. In Matlab infrastructure designer GUI, when a new train is defined, only those trains can be selected for connection or change of the rolling stock configuration that terminate at a platform. The spatial coherence requirement is automatically established in this model.

Corrected symbols on page 275:

An important parameter of optimization is the run_{tc} running time on track-circuit tc. The infrastructure model is prepared for different running times on a given real track-circuit used by different routes. Although, most of the previous research on this topic does not handle train-dependent running time. This paper introduces a simple method to resolve this issue. The complexity of the algorithm increases with the infrastructure's size, considering a real velocity profile would not satisfy the real-time traffic management requirements. The train velocity is a discrete variable in this model. The vehicles can have three motion states: forward-moving, shunting, and standstill. The moving speed is the minimum value of the maximum velocity allowed on the current track-circuit and the maximum velocity allowed of the train. Thus, the v_t velocity of a train is given by Eq. (1) depending on the motion status, $v_{max,tc}$ maximum velocity allowed on the track-circuit, and $v_{max,t}$ maximum velocity of the train.

Corrected symbols on page 276:

In Fig. 6, $sRes_{t,tc}$ and $eRes_{t,tc}$ denote the time when train t starts and finishes the reservation of track-circuit tc. The $d_{t,tc}$ is the delay assigned to train t at track-circuit tc. This variable is the key to schedule traffic participants. Delays can only be assigned to signals (at the end of block sections). It should be noted that there are different signaling systems. In general, in an n aspect system, there are $n - 2$ block sections for braking. This research considered two-aspect systems which is shown in the time-distance diagram represented by Fig. 4.

Corrected Table 7 on page 277:

Table 7 Constraints for managing delays

Constraint	Description
7	The delay assigned to a train at a track-circuit equals the difference between the entry time of the subsequent track circuit and the scheduled exit time of the track circuit ($e_{t,tc} + run_{t,tc}$).
8	The train enters the infrastructure exactly when it is scheduled.

Corrected subscript of the symbol *bs* in the text and in Eqs. (10) and (11) on page 277:

In Pellegrini et al. (2012), the $d_{t,tc}$ delay is used only if $bs_{tc} \neq bs_{stc}$ (the end of a block section). However, in our simulation environment (see Section 5), it is easier to interpret the local delay in every nominal track-circuit and manage it by constraints inserted into the MILP framework. In this case, there is no need for an additional mapping between all nominal track-circuits and those that correspond to a signal (end of a block section). The managing of delays in our approach is described by Eqs. (10)–(11).

$$d_{t,tc} = e_{t,s_{tc}} - e_{t,tc} - run_{tc} x_{t,r^{tc}} \quad \forall t \in T, tc \in TC_t : bs_{tc} \neq bs_{stc} \tag{10}$$

$$d_{t,tc} = 0 \forall t \in T, tc \in TC_t : bs_{tc} bs_{stc} \tag{11}$$

Cite this article as: (2021) "Corrigendum", Periodica Polytechnica Transportation Engineering, 49(3), p. 308. https://doi.org/10.3311/PPtr.19186