
Subject: Re: SI units in railML 3.x

Posted by [Thomas Nygreen JBD](#) on Thu, 20 Dec 2018 15:23:18 GMT

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Dear all,

- tBrakePercentage is surely no SI unit; you can change the ? to a n(o).

Brake percentage is unitless.

- I don't understand why tVMax should be SI. It is documented (in the XSD) as "maximum allowed speed in km/h". In my opinion, the SI unit for speed would be m/s, not kph. Additionally, this type should be renamed and unified with (the already existing) tSpeedKmPerHour.

I agree. Just a question: what unit is used to measure and regulate railway speeds in the UK?

- I'd like to suggest to split tLengthMM into two different grades of non-SI: Where it is used for tRadiusChange/@superelevation, it is the wrong unit at all. Superelevation is an angle and the SI unit for angles should be radiant, not mm. Therefore, here mm is used "wrongly" (but of course agreed) for an angle.

In railways, I have only seen superelevation/cant measured in mm. It is also documented in the wiki: "superelevation The superelevation of the track in millimeters, which is either valid exactly at this point or from here until the next radiusChange element. The superelevation shall be given in whole mm. / Die Überhöhung eines Gleises in Millimeter. Modelliert wird die Überhöhung entweder exakt an dieser Position oder aber für den hier beginnenden Gleisabschnitt bis zum nächsten radiusChange Element. Die Überhöhung sollte stets in ganzen Millimetern angegeben werden." So when the outside rail is 100 mm higher than the inside rail @superelevation="100" not "0.069573" (on standard gauge).

All formulas involving cant in the official Norwegian design rules use millimeters. I also checked wikipedia, which uses millimeters in the examples: [https://en.wikipedia.org/wiki/Cant_\(road/rail\)](https://en.wikipedia.org/wiki/Cant_(road/rail)) .

Best regards and happy holidays,
Thomas