

I propose these semantic rules for the loadingGauge element:

1. Define at least one kinematicProfile subelement, or one staticProfile subelement, or set the @code value.
2. For the ETCS use case, define one loadingGauge element per supported loading gauge profile.
3. For the ETCS use case, set one of these @code values: "GA", "GB", "GC", "G1"

Rationale:

The code attribute may only take one value, such as "GB", but the ETCS variable M_LINEGAUGE can specify a combination of profiles, such as 0b00000110 meaning "GA" and "GB". Hence, one loadingGauge element is needed for each profile that is suitable for the linear extension.

Background:

This documentation exists in the schema and on the wiki

<<https://wiki3.railml.org/wiki/IS:loadingGauge>>:

code: code name of the train loading gauge; use value from the separate codelist file 'TrainClearanceGauges.xml'/trainClearanceGauge (optional; xs:string)

At least these trainClearanceGauge elements are in 'TrainClearanceGauges.xml':

```
<trainClearanceGauge code="GA">
  <description>structure gauge GA according European standard</description>
  <validFor>interoperable</validFor>
</trainClearanceGauge>
<trainClearanceGauge code="GB">
  <description>structure gauge GB according European standard</description>
  <validFor>interoperable</validFor>
</trainClearanceGauge>
<trainClearanceGauge code="GC">
  <description>structure gauge GC according European standard</description>
  <validFor>interoperable</validFor>
</trainClearanceGauge>
<trainClearanceGauge code="G1">
  <description>Multilateral gauge or international gauge G1 other than GA, GB and GC as
defined in European standard.</description>
  <validFor>interoperable</validFor>
</trainClearanceGauge>
...
```

Those profile types are also the ones that are supported by ETCS and defined in SUBSET-026,

v360 (see below).

7.5.1.67.1 M_LINEGAUGE

Name Line gauge

Description Defining which loading gauge(s) are permitted on a line (refer to TSI INF)

Length of variable 8 bits

Resolution/formula Bitset

Special/Reserved Values

xxxx xxx1 G1

xxxx xx1x GA

xxxx x1xx GB

xxxx 1xxx GC

00000000 Spare

xxx1 xxxx Spare

xx1x xxxx Spare

x1xx xxxx Spare

1xxx xxxx Spare