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Subject: Line category according to EN 15528

Posted by [Christian Rahmig](#) on Mon, 01 Jun 2015 09:38:25 GMT

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Dear railML community,

with railML 2.3 we also want to implement line categories as defined in EN 15528. Therefore we set up the Trac ticket [1] including the following:

The European standard EN 15528 defines line categories depending on the maximum allowed meter load and axle load. The following entries are possible:

- \* A
- \* B1
- \* B2
- \* C2
- \* C3
- \* C4
- \* D2
- \* D3
- \* D4
- \* D4xL
- \* E4
- \* E5

Any comments on this approach, which has been initially implemented with revision 621 (see [2]), are welcome.

[1] <https://trac.railml.org/ticket/259>

[2] <https://trac.railml.org/changeset/621/railML>

Best regards

Christian

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Christian Rahmig

railML.infrastructure coordinator

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Subject: Re: Line category according to EN 15528

Posted by on Fri, 24 Jul 2015 16:02:28 GMT

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Dear Christian,

> Any comments on this approach ... are welcome.

Well, then please welcome my comments:

During earlier discussions on this "approach" we came to the conclusion better to handle "physical" values behind these rather "political" classes in railML. This means: Rather use "maxAxleLoad" and "maxMeterLoad" or "maxSpecificLoad".

The reasons were:

There are more local (country-specific) line classes than in EN15528 which means that the enumeration from EN will not fulfil many practical demands. How should we classify a German line of CE or CM2..4 when only the EN15528 are allowed? And from the other way 'round: If we allow country-specific classes as CE, how should one compare or convert it with the other values? This would only be possible by "understanding" the physical background (axleload, meterload a.s.o.), therefore we should always name this background.

There are also many examples where the classes do not fit the actual physical values (you could say, from a technical point of view, the line is wrongly classified - but the classification is political... For instance, the German line 6686/6709 is classified D4 but has apparently a load spread of less then 6 tons per meter.). So you cannot decide whether a certain vehicle or train can use the line if you only know the classification but not the actual physical values.

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I personally think that this earlier conclusion is still reasonable and therefore would still prefer the physical values such as "maxAxleLoad" and "maxMeterLoad" or "maxSpecificLoad".

Best regards,  
Dirk.

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Am 01.06.2015 um 11:38 schrieb Christian Rahmig:

> Dear railML community,  
>  
> with railML 2.3 we also want to implement line categories as defined in  
> EN 15528. Therefore we set up the Trac ticket [1] including the following:  
>  
> The European standard EN 15528 defines line categories depending on the  
> maximum allowed meter load and axle load. The following entries are  
> possible:  
> \* A  
> \* B1  
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> \* C4  
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> \* D4xL  
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> Any comments on this approach, which has been initially implemented with  
> revision 621 (see [2]), are welcome.  
>  
> [1] <https://trac.railml.org/ticket/259>  
> [2] <https://trac.railml.org/changeset/621/railML>  
>  
> Best regards  
> Christian  
>

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Subject: Re: Line category according to EN 15528  
Posted by [Christian Rahmig](#) on Mon, 31 Aug 2015 09:18:25 GMT  
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Dear Dirk,

thank you very much for your feedback. I'll comment on it below:

Am 24.07.2015 um 18:02 schrieb Dirk Bräuer:

> [...]  
>  
> During earlier discussions on this "approach" we came to the conclusion  
> better to handle "physical" values behind these rather "political"  
> classes in railML. This means: Rather use "maxAxleLoad" and  
> "maxMeterLoad" or "maxSpecificLoad".  
>  
> The reasons were:  
> There are more local (country-specific) line classes than in EN15528  
> which means that the enumeration from EN will not fulfil many practical  
> demands. How should we classify a German line of CE or CM2..4 when only  
> the EN15528 are allowed? And from the other way 'round: If we allow  
> country-specific classes as CE, how should one compare or convert it  
> with the other values? This would only be possible by "understanding"  
> the physical background (axleload, meterload a.s.o.), therefore we  
> should always name this background.  
>  
> There are also many examples where the classes do not fit the actual  
> physical values (you could say, from a technical point of view, the line  
> is wrongly classified - but the classification is political... For

> instance, the German line 6686/6709 is classified D4 but has apparently  
> a load spread of less then 6 tons per meter.). So you cannot decide  
> whether a certain vehicle or train can use the line if you only know the  
> classification but not the actual physical values.  
>  
> ---  
> I personally think that this earlier conclusion is still reasonable and  
> therefore would still prefer the physical values such as "maxAxleLoad"  
> and "maxMeterLoad" or "maxSpecificLoad".  
>  
> Best regards,  
> Dirk.  
>  
> [...]

I agree with the conclusion reached after previous discussions: it makes more sense to explicitly define the physical values of a line or track and to derive a track or line category from it. It is also clear, that there are national categories that differ from the international ones and that you may have different categories for the same railway segment. Further, I also agree with you that some category decisions are only politically motivated and differ from reality. However, since political decisions can be very relevant for railway operation, we should not forget about such aspects - and if required include them in our schema.

So, for railML modeling I suggest the following:

If you are interested in the physical parameters of your line / track, please use the more detailed and more specific parameters. As you correctly mentioned, in most cases the line category can be "derived" from these values. But if you only have the information about the line category, deriving the physical values from it may cause errors i.e. for political motivated category decisions. In this case, I suggest to use the line category parameter.

Summary: Keep both options. Use the more detailed modeling where available.

Any further comments are still welcome.

Best regards  
Christian

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Christian Rahmig  
railML.infrastructure coordinator

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Subject: Re: Line category according to EN 15528

Dear Christian and all others,

Am 31.08.2015 um 11:18 schrieb Christian Rahmig:

- >
- > So, for railML modeling I suggest the following:
- > If you are interested in the physical parameters of your line / track,
- > please use the more detailed and more specific parameters. As you
- > correctly mentioned, in most cases the line category can be "derived"
- > from these values. But if you only have the information about the line
- > category, deriving the physical values from it may cause errors i.e. for
- > political motivated category decisions. In this case, I suggest to use
- > the line category parameter.
- >
- > Summary: Keep both options. Use the more detailed modeling where available.

I think the conclusion is acceptable. We should then draw another conclusion NOT to limit the category class enumeration to the values of EN15528 to allow country-specific values as CE or CM2.

As you wrote, the category classes are rather 'political', so no need to avoid the country-specific values. As shown above, one cannot draw a 'hard', 'automatic' technical conclusion (concerning acceptance of certain vehicles) from a line's classification, so the country-specific should do no further harm.

Best regards,  
Dirk.

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Subject: Line category in Norway  
Posted by [Torben Brand](#) on Wed, 29 Nov 2017 08:29:44 GMT  
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I have been asked by Christian Rahmig to produce the enumeration list for the Norwegian line categories for railML3. As also previously stated in this topic. We have a separate list from the international list according to European standard EN 15528. Although it bases itself strongly on the international values. We have a category c+, which is not in the international list. Also we have variations of the axle load within a category based on the maximum allowed speed. Thus I agree with the previous request from Dirk to also optionally map the specific attributes: "maxAxleLoad" and "maxMeterLoad". I would also suggest a value "maxSpeedLoad". Additionally we should be able to define one or more defined enumeration list (international/national). Furthermore I think the element is to global as placed on the line level. The Norwegian term for line category "overbyggingsklasse" translates to "superstructure class". I think this more specific. Also the superstructure class/ line category can be different within a line. For instance siding tracks are usually of a lower quality. Our asset database (Banedata) defines the superstructure class (line

category) on track level. Nevertheless we also group the superstructure class/ line category on a line level in Network statement (<http://orv.jbv.no/ns/doku.php?id=vedlegg:aksellast>)

Our Norwegian values are:

Name of Norwegian list: "Overbygningsskinner"

Suggestion for univocal enumeration UUID: "NO:TRV-530-4-2"

[https://trv.jbv.no/wiki/Overbygning/Prosjektering/Generelle\\_tekniske\\_krav](https://trv.jbv.no/wiki/Overbygning/Prosjektering/Generelle_tekniske_krav)

List values:

a

b

c

c+

d

Ofofbanen