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Subject: @minOccurs, @maxOccurs and @use  
Posted by [christian.rahmig](#) on Tue, 02 Oct 2018 11:18:15 GMT  
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Dear Dirk, dear all,

let me answer on behalf of Jörg:

elements... are by default mandatory (minOccurs="1" and maxOccurs="1") [1]

attributes... are by default optional (use="optional") [2]

Therefore, mandatory elements and optional attributes don't have to have mentioned properties.

For the following cases, properties have to be provided in the schema:

- \* optional elements occurring once: minOccurs="0"
- \* optional elements occurring up to n times: minOccurs="0" and maxOccurs="n" (with n being a positive number)
- \* mandatory elements occurring up to n times: maxOccurs="n" (with n being a positive number)
- \* mandatory attributes: use="required"

[1] [https://www.w3schools.com/xml/schema\\_complex\\_indicators.asp](https://www.w3schools.com/xml/schema_complex_indicators.asp)

[2] [https://www.w3schools.com/xml/schema\\_simple\\_attributes.asp](https://www.w3schools.com/xml/schema_simple_attributes.asp)

Best regards  
Christian

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Am 01.10.2018 um 11:46 schrieb Dirk Bräuer:

- > Dear Joerg and all other's,
- >
- > at the last telephone conference, I was asked to check the new r2.4 <rollingstock> railML XSDs for more possible missing optionals.
- >
- > So, I compared rollingstock.xsd and rollingstockTypes.xsd
- > rev. 814 (RC 2.4)
- > with
- > rev. 611 (Original railML 2.3)
- > and searched for new <xs:element> definitions without "minOccurs='0'".
- >
- > I only found the one more: In rollingstock.xsd

> <xs:complexType name="eVehicleBrakes">  
>     <xs:element name="vehicleBrakeOperation" type="rail:tBasicBrakeOperation"  
maxOccurs="unbounded">  
> no "minOccurs='0'" occurs...  
>  
> The "minOccurs='0'" is also missing at some new attributes but it seems to me that for  
attributes, it is not necessary (since older attributes also have none). (Sorry, I am not the best  
choice for this task since I lack some knowledge about XSDs.)  
>  
> Joerg, please check this and, in case I am not mistaken, correct it for r2.4.  
>  
> Please correct me in case I misunderstood or tell me what else should be done.  
>  
> Best regards,  
> Dirk.  
>

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