
Subject: New attribute in RollingstockTypes

Posted by [Joerg von Lingen](#) on Wed, 05 Mar 2008 16:02:59 GMT

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Hello,

I received the request to incorporate a new attribute <maxRecoveryVoltage> to the element <propulsion>. This optional attribute of type tVoltageVolt is used as maximum net voltage during regenerative braking.

I have the revised files attached.

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Mit freundlichen Grüßen/Best regards,

Jörg von Lingen

ChangeLog of railML-rollingstock

changes committed by: coordinator (Jörg von Lingen)
SW (Susanne Wunsch)

schemas: rollingstock.xsd
rollingstockTypes.xsd

summary:

V0.91 First release

V0.93 Formations/Train compositions added,
complete revision scheme design with change to user defined types instead of element references

V0.93-1 list of train formations moved to become a subelement of 'rollingstock' to comply to general rules

element 'vehicles' introduced as root to list of vehicle data (similar top structure as on 'formations')

V0.94 Renaming of elements and attributes from 'rs....' to 'vehicle...' in order to avoid abbreviations in structure names,

more details on installed monitoring and control systems possible

V1.00 consolidated release

adding 'kinematicEnvelope' in 'wagonType' element

V1.01 adding 'auxPowerConsumption' in 'wagonType' element

changing element 'propulsion' to occur 0 upto unbounded

changing element 'valueLine' element to occur 1 upto unbounded

change of enumeration of 'supply' attribute in 'propulsion' to have consistently DC values in Volts and AC values in Kilovolts

declaring the following elements globally, which are referred to afterwards:

- 'engine'
- 'propulsion'
- 'wagon'
- 'efficiency'
- 'mechanicalLosses'
- 'tractiveEffort'
- 'brakeEffort'
- 'mechBrakeEffort'
- 'formation'
- 'trainResistance'

V1.02 adding child element 'eddyCurrentBreak' to 'brakesType'

adding child element 'pulsPatterns' to 'tractionInverterType'

adding enumeration values to attribute 'supply' from 'propulsionType'

adding attribute 'maxBrakePower' to 'propulsionType'

adding attribute 'nomRevolutions' to 'tractionMotorType'

adding default value "1" for attribute 'formationCount'

change 'valueTableType', adding information about x-axis, y-axis and z-axis units and names using the new 'unitType' as enumeration

renaming 'parameter' in 'columnHeader' to 'zValue' and adding 'zValueName' and 'zValueUnit' for information

change 'columnHeader' to optional occurrence

renaming 'compositionType' to 'formationType' in order to avoid confusion with 'compositionType' in timetable scheme

V1.03 adding 'currentType' for net current curve in traction or braking

adding 'currentLimitationType' for max. net current curve vs. net voltage in traction and braking

adding elements 'tractiveCurrent', 'brakeCurrent', 'tractiveCurrentLimitation',

'brakeCurrentLimitation', 'tractiveVehicleEfficiency' and 'brakeVehicleEfficiency' as part of the 'propulsion' element

adding unitTypes V, kV, W, kW, MW, VA, kVA, MVA

adding attribute 'meanEfficiency' type 'fourQuadrantChopperType', 'tractionInverterType', 'gearType', 'tractionMotorType' and 'trafoType'

adding attribute 'auxCosphi' to element 'auxSupply'

adding attributes 'totalTractEfficiency' and 'totalBrakeEfficiency' to 'propulsion' element

adding element 'cosphi' to 'fourQuadrantChopper' as kurve and renaming attribute 'cosphi' to 'meanCosphi'

adding attribute 'tractionOffUndervoltageThreshold' to 'propulsionType'

V1.04 removal of none SI units except km/h in 'unitType'

V1.05 rename of "forbidden" names or duplicates used for elements and attributes

element 'class' -> 'classification'

attribute 'name' in 'manufacturer' -> 'manufacturerName'

attribute 'type' in 'manufacturer' -> 'manufacturerType'

attribute 'name' in 'operator' -> 'operatorName'

attribute 'class' in 'operator' -> 'operatorClass'

attribute 'engine' in 'propulsion' -> 'powerType'

attribute 'type' in 'winding' -> 'typeStr'

adding attribute 'count' to element 'fourQuadrantChopper'

V1.06 change of most attribute types to make them more stringent

general change of percentage values to be in the range from 0 to 1 (instead of 0 to 100)

V1.1 complete and general refactoring of the scheme resulting in strict using of 'tTypes', 'aAttributeGroups' and 'eElements'

renaming several attributes from 'Reactance' to 'Inductance' in their name for physical correctness

further change of attribute types to make them more stringent

attribute 'axles' in 'vehicle' -> 'axleSequence'

adding attributes 'numDrivenAxles', 'numNonDrivenAxles' and 'trackGauge' in 'vehicle'

adding attributes 'length', 'speed' and 'weight' in 'formation' to allow replacement of that attributes in 'formation' of timetable scheme;

SW: Changing namespace to "http://www.railml.org/schemas/2007";

SW: Application of schema intern "version=1.1"

SW: stronger typing: change of untyped element "service" to type "tElementDescription"

SW: Import of MathML2 with Prefix "mml", referenced element "mml:math" in type "tCurve"

V1.1.1 adding attribute 'maxRecoveryVoltage' in 'aPropulsion'

elements in detail:

<vehicles>

History: V0.93-1 added

<formations>

History: V0.93 Formations/Train compositions added

<vehicle>

History: V0.91 First release

V0.93-1 renamed from 'rs' to 'vehicle'

<classification>

History: V0.91 First release

V0.93 change to optional use

<engine>

History: V0.91 First release

V1.01 changed to a global element in order to allow building of XML file

<wagon>

History: V0.91 First release

V0.93 change to user defined type

V1.01 changed to a global element in order to allow building of XML file

<brakes>

History: V0.91 First release

V0.92 added

V0.93 change to user defined type

<manufacturer>

History: V0.91 First release

<operator>

History: V0.92 added with 'class' element

<propulsion>

History: V0.91 First release

V0.92 extensive revision, adding all subsystems of propulsion

V0.93 change to user defined type

V1.01 changed to refer to the global element and can occur "unbounded" each for one power supply system

adding value "AC 11kV 16 2/3Hz" to the enumeration

V1.1 splitting the enumeration into physical values of frequency and voltage

<monitoring>

History: V0.92 added

V0.93 change to user defined type

<transformer>

History: V0.92 added

V0.93 change to user defined type

<fourQuadrantChopper>

History: V0.92 added

V0.93 renamed from 'fourqs' to 'fourQuadrantChopper', change to user defined type

<link>

History: V0.92 added

<tractionInverter>

History: V0.92 added

V0.93 change to user defined type

<tractionMotor>

History: V0.92 added

V0.93 change to user defined type

<diesel>

History: V0.92 added

V0.93 change to user defined type

<gear>

History: V0.93 change to user defined type

<auxSupply>

History: V0.92 added

<tractiveEffort>

History: V0.92 added

V0.93 changed to user defined type including both: MathML and value table

V1.01 changed to refer to the global element

<brakeEffort>

History: V0.92 added

V0.93 changed to user defined type including both: MathML and value table

V1.01 changed to refer to the global element

<tractiveCurrent>

History: V1.03 added

<brakeCurrent>

History: V1.03 added

<tractiveCurrentLimitation>

History: V1.03 added

<brakeCurrentLimitation>

History: V1.03 added

<tractiveVehicleEfficiency>

History: V1.03 added

<brakeVehicleEfficiency>

History: V1.03 added

<efficiency>(<transformer>)

History: V0.92 added

V1.01 changed to refer to the global element

<efficiency>(<fourQuadrantChopper>)

History: V0.92 added

V1.01 changed to refer to the global element

<cosphi>

History: V1.03 added

<efficiency>(<tractionInverter>)

History: V0.92 added

V1.01 changed to refer to the global element

<pulsPattern>

History: V1.02 added

<valueTable>

History: V0.93 added as alternative to MathML branch

<efficiency>(tractionMotor)

History: V0.92 added

V1.01 changed to refer to the global element

<mechanicalLoss>

History: V0.92 added

V0.93 change to user defined type

V1.01 changed to refer to the global element

<efficiency>(gear)

History: V0.92 added

V1.01 changed to refer to the global element

<etcs>

History: V0.94 added

<nationalSystem>

History: V0.94 added

<passenger>

History: V0.91 First release

V0.93 change from attribute of 'passenger' to sub-element with unlimited occurrence

<goods>

History: V0.91 First release

V0.93 change to user defined type

<mechBrakeEffort>

History: V0.92 added for description of effort curve

V1.01 change to refer to the global element

<eddyCurrentBrake>

History: V1.02 added

<formation>

History: V0.93 added with Formations/Train compositions

V1.01 changed to refer to global element

<trainOrder>

History: V0.93 added with Formations/Train compositions

<trainType>

History: V0.93 added with Formations/Train compositions

<sysEngine>

History: V0.93 added with Formations/Train compositions

<sysBrakes>

History: V0.93 added with Formations/Train compositions

<trainResistance>

History: V0.92 added

V0.93 moved to Formation as train related data

V1.01 changed to a global element in order to allow building of XML file

<vehicleType>

History: V0.93 added with Formations/Train compositions

V0.94 renamed from 'rsType' to 'vehicleType'

<losses>

History: V0.93 change to user defined type

<effortCurve>

History: V0.93 change to user defined type

<vehicleCurrentCurve>

History: V1.03 added as user defined type

<currentLimitation>

History: V1.03 added as user defined type

<efficiencyCurve>

History: V0.93 change to user defined type

<curve>

History: V0.93 added for change to user defined type

<math>(<curve>)

History: V0.92 added for flexible detailed description of characteristic curves in mathematical manner

V1.1 SW: changed to MathML2-namespace (as referenced element)

<valueTable>(<curve>)

History: V0.93 added as alternative to MathML branch

<columnHeader>(<valueTable>)

History: V0.93 added

V1.02 changed to optional occurrence

<valueLine>(<valueTable>)

History: V0.93 added

V1.01 changed maxOccurs to "unbounded" to allow one line per x-value

<service>(<passenger>)

History: V1.1 SW: changed to type "tElementDescription"

attributes in detail:

<version>(<rollingstock>)

History: V0.91 First release

<rollingstockID>(<rollingstock>)

History: V0.93 added

<timetableID>(<rollingstock>)

History: V1.1 added

<infrastructureID>(<rollingstock>)

History: V1.1 added

<vehicleID>(<vehicle>)

History: V0.92 moved and renamed to 'ID' from 'class' element

V0.93 renamed from 'ID' to 'rsID'

V0.94 renamed from 'rsID' to 'vehicleID' according to element name

<vehicleFamilyID>(<vehicle>)

History: V0.93 added to reference to vehicle family with all common data when specifying individual vehicles

V0.94 renamed from 'base_rsID' to 'vehicleFamilyID' to express its function

<axleSequence>(<vehicle>)

History: V0.91 First release

V1.1 renamed from 'axles' to 'axleSequence' for better distinction to new attributes of axle counts

<numDrivenAxles>(<vehicle>)

History: V1.1 added

<numNonDrivenAxles>(<vehicle>)

History: V1.1 added

<trackGauge>(<vehicle>)

History: V1.1 added

<length>(<vehicle>)

History: V0.91 First release

V1.06 changed attribute type

<speed>(<vehicle>)

History: V0.91 First release

V0.93 changed type from 'int' to 'decimal'

V1.06 changed attribute type

<bruttoWeight>(<vehicle>)

History: V0.91 First release

V1.06 changed attribute type

<nettoWeight>(<vehicle>)

History: V0.91 First release

V1.06 changed attribute type

<bruttoadhWeight>(<vehicle>)

History: V0.92 added

V1.06 changed attribute type

<nettoadhWeight>(<vehicle>)

History: V0.92 added

V1.06 changed attribute type

<resistFactor>(<vehicle>)

History: V0.92 added

V0.93 change type from 'float' to 'decimal' and moved to 'vehicle' element to have it at same location independent of vehicle type

<manufacturerName>(<manufacturer>)

History: V0.91 First release

V1.05 rename to 'manufacturerName' in order to avoid "forbidden" words

<manufacturerType>(<manufacturer>)

History: V0.91 First release

V1.05 rename to 'manufacturerType' in order to avoid "forbidden" words

<serialNumber>(<manufacturer>)

History: V0.94 added

<operatorName>(<operator>)

History: V0.92 added with 'class' element

V1.05 rename to 'operatorName' in order to avoid "forbidden" words

<operatorClass>(<operator>)

History: V0.92 added with 'class' element

V1.05 rename to 'operatorClass' in order to avoid "forbidden" words

<power>(<propulsion>)

History: V0.91 First release

V0.92 change type from 'string' to 'float'

V0.93 change type from 'float' to 'decimal'

V1.06 changed attribute type, base unit changed to Watt (before kW)

<powerType>(<propulsion>)

History: V0.91 First release

V0.92 change type from 'string' to 'enumeration'

V1.05 rename to 'powerType' to avoid confusion with 'engine' element

<transmission>(<propulsion>)

History: V0.91 First release

V0.92 change type from 'string' to 'enumeration'

<maxTractEffort>(<propulsion>)

History: V0.92 added

V0.93 change type from 'int' to 'decimal'

V1.06 changed attribute type, base unit changed to Newton (before kN)

<rotMassFactor>(<propulsion>)

History: V0.92 added

V0.93 change type from 'float' to 'decimal'

<rackTraction>(<propulsion>)

History: V0.92 added

<remoteControl>(<propulsion>)

History: V0.92 added

<numNotches>(<propulsion>)

History: V0.92 added

V1.06 changed attribute type

<wheelDiameter>(<propulsion>)

History: V0.92 added

V1.06 changed attribute type

<maxBrakeEffort>(<propulsion>)

History: V0.92 added

V1.06 changed attribute type, base unit changed to Newton (before kN)

<maxBrakePower>(<propulsion>)

History: V1.02 added

V1.06 changed attribute type, base unit changed to Watt (before kW)

<totalTractEfficiency>(<propulsion>)

History: V1.03 added

V1.06 changed attribute type

<totalBrakeEfficiency>(<propulsion>)

History: V1.03 added

V1.06 changed attribute type

<tractionOffUndervoltageThreshold>(<propulsion>)

History: V1.03 added

V1.06 changed attribute type

<maxRecoveryVoltage>(<propulsion>)

History: V1.1.1 added

<linear>(<monitoring>)

History: V0.92 added

<punctual>(<monitoring>)

History: V0.92 added

<baliseTransp>(<monitoring>)

History: V0.92 added

<radio>(<monitoring>)

History: V0.92 added

<version>(<etcs>)

History: V0.94 added

<level_0>(<etcs>)

History: V0.94 added

<level_1>(<etcs>)

History: V0.94 added

<level_2>(<etcs>)

History: V0.94 added

<level_3>(<etcs>)

History: V0.94 added

<level_STM>(<etcs>)

History: V0.94 added

<feResistance>(<transformer>)

History: V0.93 added

V1.1 changed attribute type

<addResistance>(<transformer>)

History: V0.93 added

V1.1 changed attribute type

<mainInductance>(<transformer>)

History: V0.93 added

V1.1 renamed to 'mainInductance' for physical correctness, changed attribute type

<meanEfficiency(<transformer>)

History: V1.03 added

V1.06 changed attribute type

<typeStr(<winding>)

History: V0.92 added

V1.05 rename to 'typeStr' in order to avoid "forbidden" words

<nomVoltage(<winding>)

History: V0.92 added

V1.06 changed attribute type

<nomCurrent(<winding>)

History: V0.92 added

V1.06 changed attribute type

<transformationRatio(<winding>)

History: V0.93 added

<primaryResistance(<winding>)

History: V0.93 added

<secondaryRestistance(<winding>)

History: V0.93 added

<primaryLeakageInductance(<winding>)

History: V0.93 added

V1.1 renamed to 'primaryLeakageInductance' for physical correctness

<secondaryLeakageInductance(<winding>)

History: V0.93 added

V1.1 renamed to 'secondaryLeakageInductance' for physical correctness

<meanCosphi(<fourQuadrantChopper>)

History: V0.92 added

V1.03 renamed from 'cosphi' to 'meanCosphi' to avoid mixup with new element 'cosphi'

V1.06 changed attribute type

<meanEfficiency(<fourQuadrantChopper>)

History: V1.03 added

V1.06 changed attribute type

<nomVoltage(<link>)

History: V0.92 added

V1.06 changed attribute type

<nomCurrent(<link>)

History: V0.92 added
V1.06 changed attribute type

<meanEfficiency>(<tractionInverter>)

History: V1.03 added
V1.06 changed attribute type

<nomPower>(<tractionMotor>)

History: V0.92 added
V1.06 changed attribute type, base unit changed to Watt (before kW)

<nomVoltage>(<tractionMotor>)

History: V0.92 added
V1.06 changed attribute type

<nomCurrent>(<tractionMotor>)

History: V0.92 added
V1.06 changed attribute type

<nomFrequency>(<tractionMotor>)

History: V0.92 added
V1.1 changed attribute type

<nomFlux>(<tractionMotor>)

History: V0.92 added

<cosphi>(<tractionMotor>)

History: V0.92 added
V1.06 changed attribute type

<numPairPoles>(<tractionMotor>)

History: V0.92 added
V1.06 changed attribute type

<statorResistance>(<tractionMotor>)

History: V0.92 added
V1.1 changed attribute type

<rotorResistance>(<tractionMotor>)

History: V0.92 added
V1.1 changed attribute type

<feResistance>(<tractionMotor>)

History: V0.92 added
V1.1 changed attribute type

<addResistance>(<tractionMotor>)

History: V0.92 added

V1.1 changed attribute type

<mainInductance>(<tractionMotor>)

History: V0.92 added

V1.1 renamed to 'mainInductance' for physical correctness, changed attribute type

<statorLeakageInductance>(<tractionMotor>)

History: V0.92 added

V1.1 renamed to 'statorLeakageInductance' for physical correctness, changed attribute type

<rotorLeakageInductance>(<tractionMotor>)

History: V0.92 added

V1.1 renamed to 'rotorLeakageInductance' for physical correctness, changed attribute type

<numRevolutions>(<tractionMotor>)

History: V1.02 added

V1.06 changed attribute type

<meanEfficiency>(<tractionMotor>)

History: V1.03 added

V1.06 changed attribute type

<nomPower>(<diesel>)

History: V1.1 added

<fuelCapacity>(<diesel>)

History: V1.1 added

<meanEfficiency>(<diesel>)

History: V1.1 added

<ratio>(<gear>)

History: V0.92 added

<meanEfficiency>(<gear>)

History: V1.03 added

V1.06 changed attribute type

<nomPower>(<auxSupply>)

History: V0.92 added

V1.06 changed attribute type, base unit changed to Watt (before kW)

<auxCosphi>(<auxSupply>)

History: V1.03 added

V1.06 changed attribute type

<name>(<nationalSystem>)

History: V0.94 added

<rotMassFactor>(<wagon>)

History: V0.93 added

<kinematicEnvelope>(<wagon>)

History: V1.0 added

<auxPowerConsumption>(<wagon>)

History: V1.01 added

V1.06 changed attribute type, base unit changed to Watt (before kW)

<class1>(<passenger>)

History: V0.91 First release

V1.06 changed attribute type

<class2>(<passenger>)

History: V0.91 First release

V1.06 changed attribute type

<lowFloorPortion>(<passenger>)

History: V0.91 First release

V0.92 renamed from 'niederfluranteil' to 'lowboardShare'

V0.93 renamed from 'lowboardShare' to 'lowFloorPortion'

V1.06 changed attribute type

<catering>(<passenger>)

History: V0.91 First release

<baggage>(<passenger>)

History: V0.91 First release

V0.93 renamed from 'package' to 'baggage'

<deck>(<passenger>)

History: V0.91 First release

V0.92 changed from 'string' to 'enumeration' type

V1.06 just named the type of enumeration 'tVerbalCounter'

<controlTrailer>(<passenger>)

History: V0.91 First release

<tilting>(<passenger>)

History: V0.92 added

<load>(<goods>)

History: V0.91 First release

V0.92 rename from 'weight' to 'load'

V1.06 changed attribute type

<volume>(<goods>)

History: V0.91 First release

V1.1 change of attribute type

<G>(<brakes>)

History: V0.91 First release

V1.1 change of attribute type

<P>(<brakes>)

History: V0.91 First release

V1.1 change of attribute type

<R>(<brakes>)

History: V0.91 First release

V1.1 change of attribute type

<RMg>(<brakes>)

History: V0.91 First release

V1.1 change of attribute type

<decelerationRate>(<brakes>)

History: V0.92 added

V1.1 change of attribute type

<maxPower>(<eddyCurrentBrake>)

History: V1.02 added

V1.06 changed attribute type, base unit changed to Watt (before kW)

<maxEffort>(<eddyCurrentBrake>)

History: V1.02 added

V1.06 changed attribute type, base unit changed to Newton (before kN)

<minSpeed>(<eddyCurrentBrake>)

History: V1.02 added

<formationID>(<formation>)

History: V0.93 added with Formations/Train compositions

<formationCount>(<formation>)

History: V0.93 added with Formations/Train compositions

V1.02 default value="1" added

V1.06 changed attribute type

<formationType>(<formation>)

History: V0.93 added with Formations/Train compositions

V1.1 change of attribute type

<length>(<formation>)

History: V1.1 added

<speed>(<formation>)

History: V1.1 added

<weight>(<formation>)

History: V1.1 added

<orderNumber>(<vehicle>)

History: V0.93 added with Formations/Train compositions
V1.06 changed attribute type

<vehicleID>(<vehicle>)

History: V0.93 added with Formations/Train compositions
V0.94 renamed from 'rsID' to 'vehicleID'

<vehicleCount>(<vehicle>)

History: V0.93 added with Formations/Train compositions
V0.94 renamed from 'rsCount' to 'vehicleCount'
V1.06 changed attribute type

<acceleration>(<sysEngine>)

History: V0.93 added with Formations/Train compositions

<regDeceleration>(<sysBrakes>)

History: V0.93 added with Formations/Train compositions

<emerDeceleration>(<sysBrakes>)

History: V0.93 added with Formations/Train compositions

<tunnelFactor>(<trainResistance>)

History: V0.93 added

<count>(general assembly)

History: V0.92 added
V1.06 changed attribute type

<typeStr>(general assembly)

History: V0.92 added
V1.1 change of attribute type

<zValue>(<columnHeader>)

History: V0.93 added
V1.02 renamed from 'parameter' to 'zValue'

<yValue>(<values>)

History: V1.02 added

<xValue>(<valueLine>)

History: V1.02 renamed from 'speedValue' to 'xValue'

<xValueName>(<valueTable>)

History: V1.02 added

<xValueUnit>(<valueTable>)

History: V1.02 added

<yValueName>(<valueTable>)

History: V1.02 added

<yValueUnit>(<valueTable>)

History: V1.02 added

<zValueName>(<valueTable>)

History: V0.93 added

V1.02 renamed from 'columnName' to 'zValueName' in order to have similar names for X, Y and Z

<zValueUnit>(<valueTable>)

History: V1.02 added

File Attachments

- 1) [changelog_rollingstock](#), downloaded 447 times
 - 2) [RollingstockTypes.xsd](#), downloaded 466 times
-