Block definition diagram

2026-11-19 · `examples/types/sysml-block-definition.json`

2 views · 14 cards · 8 lines

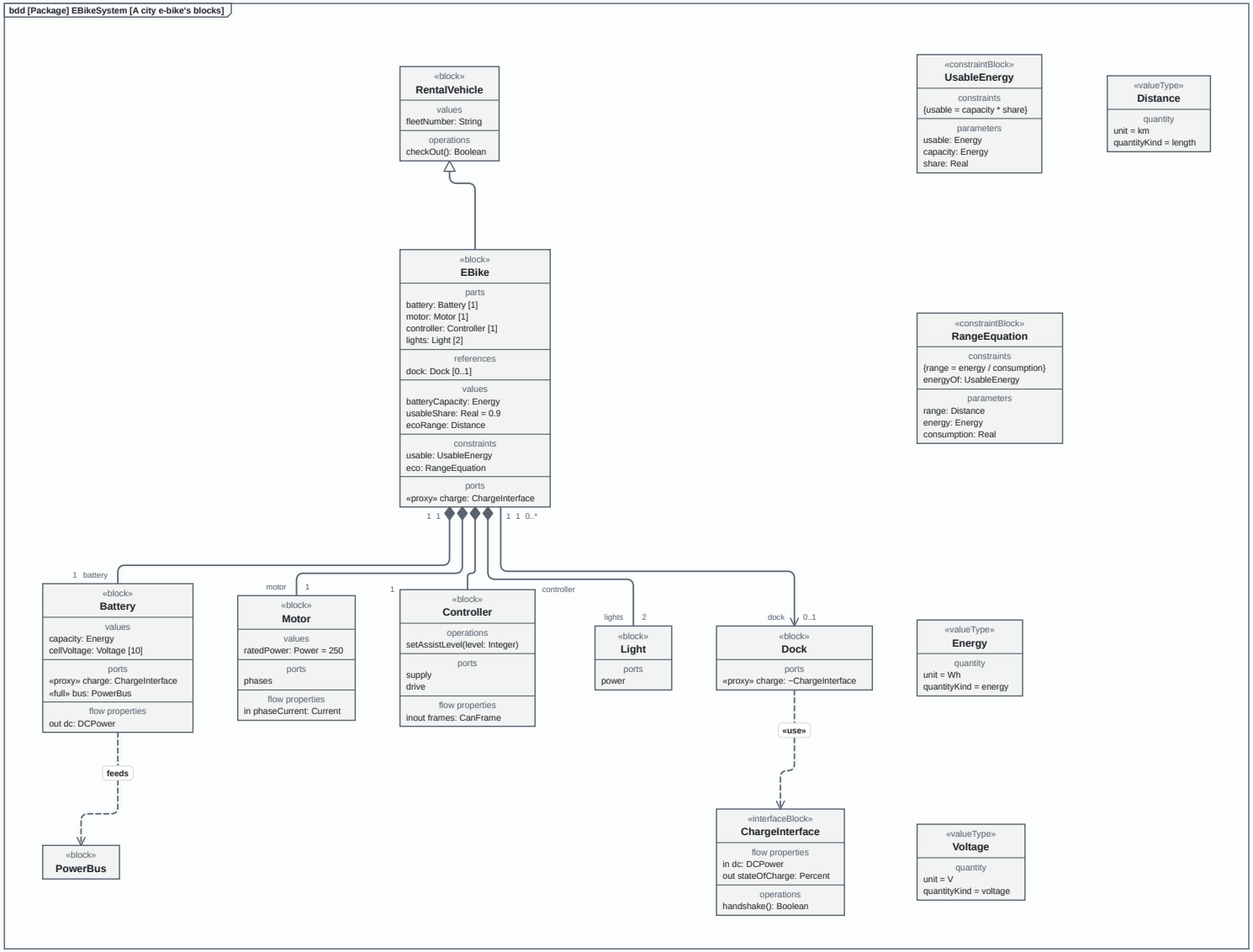
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The same blocks, laid out right 4

A city e-bike's blocks

14 cards · 8 lines



Legend —— **Association** a link between instances —▷ **Generalization** is a kind of the one it points to --> **Dependency** uses the one it points to —◆ **Composition** the whole owns its parts

—> **Navigable end** reachable from the other end

A city e-bike's blocks (continued)

Elements 14

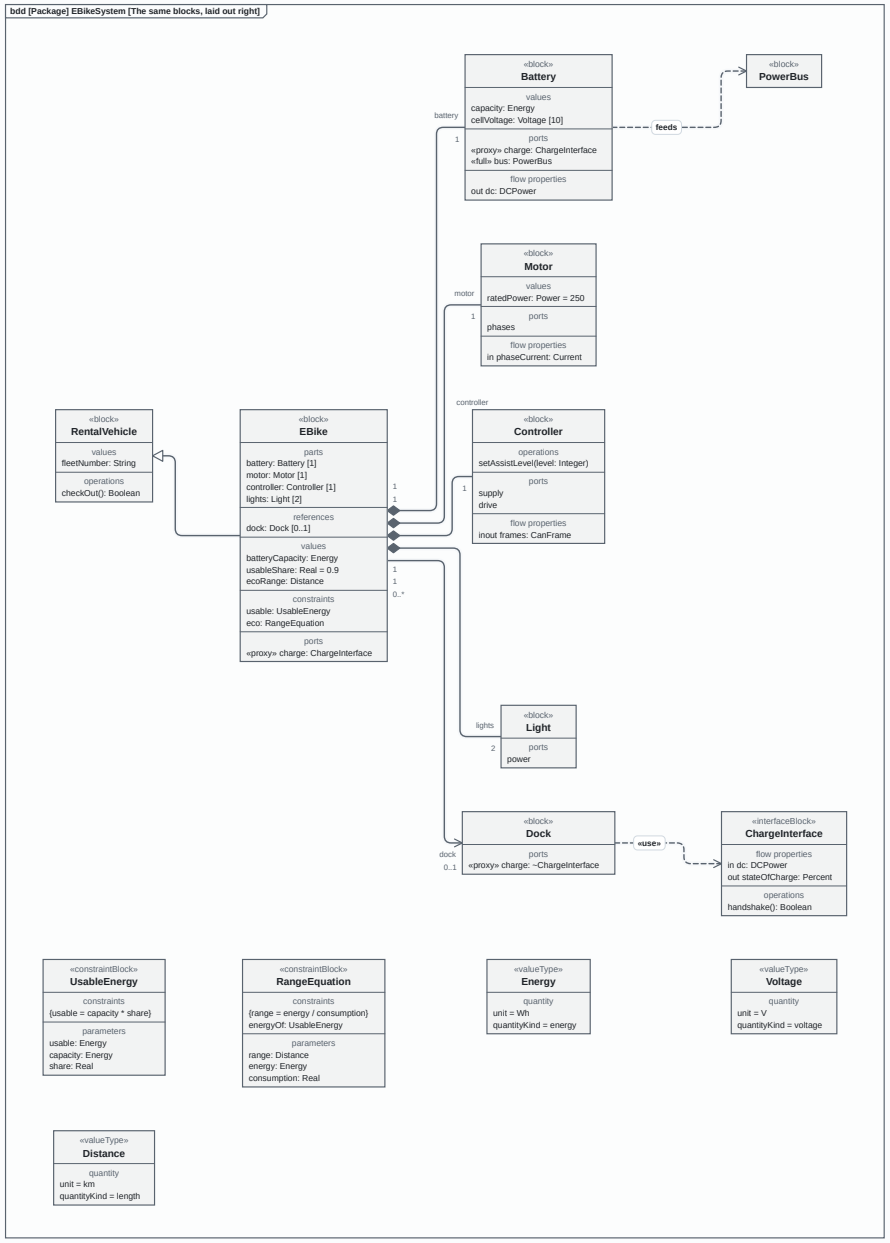
Card	Kind	Members
RentalVehicle	Block	values: fleetNumber: String operations: checkOut(): Boolean
EBike	Block	parts: battery: Battery [1] parts: motor: Motor [1] parts: controller: Controller [1] parts: lights: Light [2] references: dock: Dock [0..1] values: batteryCapacity: Energy values: usableShare: Real = 0.9 values: ecoRange: Distance constraints: usable: UsableEnergy constraints: eco: RangeEquation ports: «proxy» charge: ChargeInterface
Battery	Block	values: capacity: Energy values: cellVoltage: Voltage [10] ports: «proxy» charge: ChargeInterface ports: «full» bus: PowerBus flow properties: out dc: DCPower
Motor	Block	values: ratedPower: Power = 250 ports: phases flow properties: in phaseCurrent: Current
Controller	Block	operations: setAssistLevel(level: Integer) ports: supply ports: drive flow properties: inout frames: CanFrame
Light	Block	ports: power
Dock	Block	ports: «proxy» charge: ~ChargeInterface
PowerBus	Block	
ChargeInterface	Interface block	flow properties: in dc: DCPower flow properties: out stateOfCharge: Percent operations: handshake(): Boolean
UsableEnergy	Constraint block	constraints: {usable = capacity * share} parameters: usable: Energy parameters: capacity: Energy parameters: share: Real

Elements 14 (continued)

Card	Kind	Members
RangeEquation	Constraint block	constraints: {range = energy / consumption} constraints: energyOf: UsableEnergy parameters: range: Distance parameters: energy: Energy parameters: consumption: Real
Energy	Value type	quantity: unit = Wh quantity: quantityKind = energy
Voltage	Value type	quantity: unit = V quantity: quantityKind = voltage
Distance	Value type	quantity: unit = km quantity: quantityKind = length

Lines 8

From → to	Label	Kind
EBike → RentalVehicle		Generalization
EBike → Battery	[1] · battery [1]	Association
EBike → Motor	[1] · motor [1]	Association
EBike → Controller	[1] · controller [1]	Association
EBike → Light	[1] · lights [2]	Association
EBike → Dock	[0..*] · dock [0..1]	Association
Dock → ChargeInterface	«use»	Dependency
Battery → PowerBus	feeds	Dependency



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