



| Item # | Changed elements | Affected Class(es) | Description of change | Rationale (reference to main text section x.y.z, or to other items in this list #X) |
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| 1 | Relationship | AreaLocation - AssociatedNetElement | navigability arrow added to aggregation end | consistency ; see 3.5.2 |
| 2 | Relationship | AssociatedNetElement - PositioningNetElement | Name "positioningSystem" was moved from association to association end | See 3.5.2 |
| 3 | Inheritance | AssociatedPositioningSystem | AssociatedPositioningSystem is now derived from BaseObject instead of NetworkResource | Consequence of #23 |
| 4 | Attributes | AssociatedPositioningSystem | Attributes "validFrom" and "validTo" were inherited from BaseObject in RTM 1.0, are no longer inherited in RTM 1.1. They are now introduced as fresh attributes of AssociatedPositioningSystem. | Need for keeping validity dates, however with different semantics compared to Network Resources. See 3.4.1, 4 th bullet. |
| 5 | Relationship | AssociatedPositioningSystem - PositioningNetElement | Name "positioningSystem" was moved from association to association end | See 3.5.2 |
| 6 | Relationship | AssociatedPositioningSystem IntrinsicCoordinate | Three changes: removed superfluous (because of composition) cardinality on diamond end; added navigability on the other end; moved association name to that end. | consistency; see 3.5.2 |
| 7 | Attributes | BaseObject | Attribute "id" added is of generic type tID | facilitate compatibility with legacy data repositories; see 3.4.1 |
| 8 | Types | tID | Generic type tID has two subtypes: UUID (which is the preferred choice) and legacyID | facilitate compatibility with legacy data repositories; see 3.4.1 |
| 9 | Attributes | BaseObject | Attribute "name" moved into new Business concept "NamedResource" | Attribute "name" should only be inherited where it is meaningful. See 3.4.1 |
| 10 | Attributes | BaseObject | Attributes "validFrom" and "validTo" moved to several derived classes (NetworkResource, PositioningSystem, AssociatedPositioningSystem) | these attributes are meaningful only in some derived classes. See 3.4.1 |



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| 11 | Relationship | CompositionNetElement - ElementPartCollection | Removed superfluous cardinality and added navigability arrow | same as #6 |
| 12 | Inheritance | ElementPartCollection | ElementPartCollection is now derived from BaseObject instead of NetworkResource | No need for validity dates, as validity information is carried at CompositionNetElement level. CompositionNetElements holds collections of references to other NetElements, the validity of which is determined by the Composition validity limits. |
| 13 | Inheritance | EntityLocation | EntityLocation is now derived from BaseObject instead of NetworkResource | EntityLocation does not need to be named, as it is attached to exactly one, named, LocatedNetEntity. |
| 14 | Relationship | EntityLocation - LocatedNetEntity | Aggregation changed into composition; added navigability arrow. | Locations are not meant to be shared by several Entities even when they are identical, because 1) it may be a coincidence with no further meaning; 2) this eases railML compatibility. See also #6 |
| 15 | Relationship | IntrinsicCoordinate - PositioningSystemCoordinate | Name "coordinates" was moved from association to association end | See #6 |
| 16 | Inheritance | IntrinsicCoordinate | IntrinsicCoordinate is now derived from BaseObject | See #35 |
| 17 | Relationship | LevelNetwork - Network | No longer a composition. Name, cardinalities and navigability changed accordingly | See 3.5.4; see #6 |
| 18 | Relationship | LinearAnchorPoint - LinearPositioningSystem | Definition streamlined | See #6. |
| 19 | Inheritance | LinearAnchorPoint | LinearAnchorPoint is now derived from BaseObject instead of NetworkResource | No need for names or validity dates for these points. In addition, LinearAnchorPoints are no longer tied to networks (which was the case before, resulting them in being part of two compositions). |



RT 1.1 changelog vs. RTM 1.0

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| 20 | Relationship | LinearLocation - PositioningNetElement | Name "netElement" was moved from association to association-end | See #6 |
| 21 | Relationship | LinearLocation OrderedAssociatedNetElement | Definition streamlined | See #6 |
| 22 | Relationship | LinearLocationCoordinate PositioningSystemCoordinate | Name "positioningSystemCoordinates" added to association-end | See #6 |
| 23 | New Class | NamedResource | Differentiate Objects with identifier (name) from Objects without identifier | Avoid meaningless attributes in subclasses |
| 24 | Relationship | NetElement - Relation | Name "relations" was moved from association to association-end | See #6 |
| 25 | Relationship | Network - NetworkResource | Definition streamlined; aggregation shared instead of aggregation composite | See #6. Networks may now overlap (i.e., share network resources). See 3.5.4. |
| 26 | Inheritance | NetworkResource | LinearAnchorPoint is now derived from "NamedResource" instead of "BaseObject" | Need for a name, but not for validity limits. |
| 27 | Attributes | NetworkResource | Attributes "validFrom" and "validTo" moved from "BaseObject" | These attributes are needed by all derived classes, with consistent meaning. |
| 28 | Relationship | OrderedCollection - NetElement | Name "elementPart (ordered)" was moved from association to association-end and rephrased to "elementPart" | See #6 |
| 29 | Relationship | PositionedRelation PositioningNetElement | Name "elementA" was moved from association to association-end | See #6 |
| 30 | Relationship | PositionedRelation PositioningNetElement | Name "elementB" was moved from association to association-end | See #6 |
| 31 | Inheritance | PositioningSystem | PositioningSystem is now derived from NamedResource instead of BaseObject | The new inheritance plus the |
| 32 | Attributes | PositioningSystem | Attributes "validFrom" and "validTo" | |
| 33 | Relationship | SpotLocation PositioningNetElement | Name "netElement" was moved from association to association-end | See #6 |



RT 1.1 changelog vs. RTM 1.0

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| 34 | Relationship | UnorderedCollection PositioningNetElement | Name "elementPart" was moved from association to association-end. | See #6 |
| 35 | Inheritance | IntrinsicCoordinate | IntrinsicCoordinate inherits from BaseObject in RTM 1.1; it had no ancestor in RTM 1.0 | To facilitate e.g. implementation of persistence mechanisms (at BaseObject level, and inherited by all subclasses). |
| 36 | Attributes | LevelNetwork | Levels used to be designated by their name (string) which is no longer inherited from BaseObject; instead, the attribute descriptionLevel has been introduced, the values of which are enumerated. | Several levels (Macro, Meso, Micro) are normative, and part of the enumeration. See 3.4.2, 3 rd bullet. |
| 37 | Attribute | NamedResource | LongName attribute has been introduced in addition to the Name attribute moved from BaseObject. | Return from experience / good practice: usage of short names only quickly leads to confusion of human readers. |
| 38 | Relationship | LinearLocation- PositioningNetElement | Removed. | This direct link was redundant with the other link (via OrderedAssociatedNetElement), but does not record the order; it was therefore the least useful link, hence the suppression. |