



NM 23.0.0 - NOP/B2B Reference Manuals - CommonServices

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References

External

[1] AIM: Aeronautical Information Exchange Model (<http://www.aixm.aero>)

[2] On UUIDs: http://en.wikipedia.org/wiki/Universally_Unique_Identifier

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Terminology

Main Abbreviations and Acronyms

AIXM (Aeronautical Information Exchange Model)

See [1].

UUID (Universally Unique Identifier)

See [2].

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Chapter 1. Introduction

1.1. Identification

- (1) This document forms part of the set of the NM 23.0.0 - NOP/B2B Reference Manuals, which all together form the NM 23.0.0 - NOP/B2B Documentation.
- (2) Its reference is B2B/23.0.0/Common.
- (3) Its title is NM 23.0.0 - NOP/B2B Reference Manuals - CommonServices.

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Chapter 2. Context

- (1) NM NOP/B2B provides a generic service to download files.
- (2) More specific and precise services are available in the relevant service groups.
- (3) This document contains also the description of the basic data types used by the high level service groups.
 - a) Temporal concepts
 - b) Kinematic concepts
 - c) Abstract Request/Reply classes with their generic report status mechanism.
 - d) And miscellaneous basic types.

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Chapter 3. Port Types

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Chapter 4. Data Types

4.1. typedef<string> AirNavigationUnitId

- (1) Unique id of an air navigation unit, provided by NM.
- (2) Pattern: ANY{1, 12}
- (3) Used by: [FlightPlanMessage](#), [AUPChainRetrievalRequest](#), [AUPChain](#), [AUPSummary](#), [Subscription](#), [MCDMTopicUpdateRequest](#), [MessageOriginator](#), [UserManagedSimulation](#), [AUPGetManageableRouteSegmentsForAMCAndRouteRequest](#), [MCDMUserAndRole](#), [LastUpdate](#), [MCDMTopicListRequestSelector](#), [MCDMUserRoleAndApprovalState](#), [MCDMMessage](#), [AUPGetManageableRoutesForAMCRequest](#), [FlightSetDefinitionElement](#), [FlightDataMessage](#), [ScenarioListRequest](#), [FlightFilingResultMessageFilter](#), [ScenarioAttributes](#), [MCDMStatefulTopic](#).

4.2. typedef<int> Bearing

- (1) Bearing angle expressed as an integer amount of degrees.
- (2) Range: [0, 360].
- (3) Used by: [ReferencePoint](#), [WindVector](#).

4.3. Dataset

- (1) The type of this dataset. See [Forecast and Operational Datasets](#), [Proposal Flights](#), and [Simulation DataSets](#).
- (2) Attributes:
 - a) **[DatasetType](#) type** (*Mandatory*)
The type of this dataset.
 - b) **[SimulationIdentifier](#) simulationIdentifier** (*Optional*)
In case the dataset type is SIMULATION, the identifier of the simulation.
Constraint: See [INVALID_SIMULATION_IDENTIFIER](#)
- (3) Constraint:

- a)

Name	INVALID_SIMULATION_IDENTIFIER
Attribute	simulationIdentifier
Description	The simulationIdentifier needs to be set to null if the datasetType is set to FORECAST or OPERATIONAL and not null if the datasetType is set to SIMULATION

- (4) Used by: [FlightRetrievalRequest](#), [MCDMOnlyCancelRequest](#), [MCDMOnlyCreationRequest](#), [FlightListRequest](#), [MCDMTopicUpdateRequest](#), [MCDMStateUpdateRequest](#), [MCDMTopicListRequest](#).

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[tRequest](#), [RegulationUpdateRequest](#), [ReroutingCancelRequest](#), [SimulationStopRequest](#), [RegulationCreationRequest](#), [TacticalConfigurationPlan](#), [TacticalConfigurationRetrievalRequest](#), [Hot-spotPlans](#), [MeasureOpLogRetrievalRequest](#), [Simulation](#), [UpdateFlightsInMeasureRequest](#), [Hot-spotListRequest](#), [MeasureListReplyData](#), [ScenarioMeasureRetrievalRequest](#), [TrafficCounts-Request](#), [RegulationProposalFilingRequest](#), [RegulationProposalUpdateRequest](#), [MeasureListRequest](#), [RegulationCancelRequest](#), [NetworkImpactAssessmentRetrievalRequest](#), [ReroutingUpdateRequest](#), [ATFCMSituationRequest](#), [ReroutingCreationRequest](#), [MCDMOnlyUpdateRequest](#), [ScenarioListRequest](#), [RegulationProposalRevocationRequest](#).

4.4. <<strict enumeration>> DatasetType

- (1) Possible dataset types.
- (2) Values:
 - a) **FORECAST**
 - b) **OPERATIONAL**
 - c) **SIMULATION**
- (3) Used by: [Dataset](#).

4.5. typedef<string> DateTimeMinute

- (1) String representation of a date and time in the day (Gregorian Calendar - UTC).
- (2) Its format is "YYYY-MM-DD hh:mm". Example: "2013-12-01 11:37".
- (3) Possible values of YYYY, MM and DD in "YYYY-MM-DD" are defined in [DateYearMonthDay](#).
- (4) Possible values of hh and mm in "hh:mm" are defined in [TimeHourMinute](#).
- (5) Pattern: DIGIT{4}-DIGIT{2}-DIGIT{2} DIGIT{2}:DIGIT{2}
- (6) Used by: [GeneralAPIRequest](#), [ArrivalInformation](#), [EarlyDPIRequest](#), [SlotImprovementProposal](#), [FlightArrivalRequest](#), [LandingInformation](#), [AUPServiceConfigurationReply](#), [AUPSummary](#), [TargetTakeOffAPIRequest](#), [TargetTimeOverAPIRequest](#), [FourDFlightPoint](#), [MCDMDeadlines](#), [Simulation](#), [TargetDPIRequest](#), [CDMInfo](#), [FlightKeys](#), [ReroutingReference](#), [EAUPSummary](#), [DepartureInformation](#), [ActualTimeAtTarget](#), [ATCDPIRequest](#), [FlightPlan](#), [SlotSwapCandidate](#), [UpdatedDPIRequest](#), [ProfileValidity](#), [DateTimeMinutePeriod](#), [PredictedDPIRequest](#), [FlightDepartureRequest](#), [FlightEvent](#), [AIMSummary](#), [APISubmissionRules](#), [FlightInformationUpdateRequest](#), [DateTimeMinutePeriodWithUFN](#), [ForceFlightInRegulation](#), [FlightDelayRequest](#), [Flight](#), [FlightPlanUpdate](#), [TimeAndModel](#).

4.6. DateTimeMinutePeriod

- (1) Left-closed, right-opened period of UTC times, up to the minute precision.
- (2) Attributes:

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- a) **[DateTimeMinute](#) wef** (Mandatory)
Start time of the period.
Constraint: See [INVALID_PERIOD](#)
- b) **[DateTimeMinute](#) unt** (Mandatory)
End time of the period.
Constraint: See [INVALID_PERIOD](#)

(3) Constraint:

a)

Name	INVALID_PERIOD
Attributes	wef , unt
Description	wef must be less or equal to unt.

(4) Used by: [AUPSummary](#), [FlightListRequest](#), [RegulationInitialConstraint](#), [PlannedRunwayConfigurations](#), [AUPRSAAllocationExpansionRequest](#), [FlightListByLocationReplyData](#), [AbstractEAUP-CDRRequest](#), [Simulation](#), [PlannedTrafficVolumeActivation](#), [AUPGetManageableRoutesForAMCRequest](#), [EAUPSummary](#), [HotspotId](#), [ScenarioMeasureRetrievalRequest](#), [FlightPlanListRequest](#), [PlannedOTMV](#), [AbstractEAUPRSARequest](#), [TrafficCountsRequest](#), [ScenarioImpact](#), [AUPGetManageableRouteSegmentsForAMCAndRouteRequest](#), [PlannedSectorConfigurationActivation](#), [AT-FCMSituationRegulation](#), [MeasureListRequest](#), [RegulationSupplementaryConstraint](#), [SimulationAvailability](#), [Measure](#), [PlannedCapacity](#), [TrafficCountsReplyData](#), [OtmvAlert](#).

4.7. DateTimeMinutePeriodWithUFN



Figure 4.1. DateTimeMinutePeriodWithUFN Class Diagram

- (1) wef can be equal to unt
- (2) Attributes:
- a) **[DateTimeMinute](#) wef** (Optional)
- b) **[DateTimeMinute](#) unt** (Optional)
- (3) Used by: [WeeklyScheduleItem](#), [NetworkImpactAssessmentRetrievalReply](#), [ScenarioAttributes](#).

4.8. typedef<string> DateTimeSecond

- (1) String representation of a date and time in the day (Gregorian Calendar - UTC).
- (2) Its format is "YYYY-MM-DD hh:mm:ss". Example: "2013-12-01 11:37:25".

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- (3) Possible values of YYYY, MM and DD in "YYYY-MM-DD hh:mm:ss" are defined in [DateYear-MonthDay](#).
- (4) Pattern: DIGIT{4}-DIGIT{2}-DIGIT{2} DIGIT{2}:DIGIT{2}:DIGIT{2}
- (5) Used by: [AirFiledData](#), [FlightPoint](#), [Subscription](#), [MCDMTopicListRequest](#), [FourDPosition](#), [InvalidFiling](#), [Reply](#), [NetworkImpactAssessmentRetrievalReply](#), [FlightAirspace](#), [FlightOperationalLogEntry](#), [LifeCycleEvent](#), [MCDMMessage](#), [FlightPlanHistoryInfo](#), [FlightEvent](#), [FlightPlanEvent](#), [DateTimeSecondPeriod](#), [File](#), [LastUpdate](#), [ProfileTuningRestriction](#), [ATFCMSituationReply](#), [Request](#), [ScenarioListRequest](#), [TargetTime](#), [FlightRestriction](#), [ScenarioAttributes](#).

4.9. DateTimeSecondPeriod

- (1) Left-closed, right-opened period of UTC times, up to the second precision.
- (2) Attributes:
- a) **DateTimeSecond wef** (Mandatory)
Start time of the period (wef stands for "with effect from").
Constraint: See [INVALID_PERIOD](#)
- b) **DateTimeSecond unt** (Mandatory)
End time of the period.
Constraint: See [INVALID_PERIOD](#)
- (3) Constraint:

a)

Name	INVALID_PERIOD
Attributes	wef , unt
Description	wef must be less or equal to unt.

4.10. typedef<string> DateYearMonthDay

- (1) String representation of a date (Gregorian Calendar - UTC).
- (2) Its format is "YYYY-MM-DD". Example: "2013-12-01".
- (3) Possible values of YYYY are 4-digit numeric in [0001, ..., 9998].
- (4) Possible values of MM are 2-digit numeric in [01, ..., 12].
- (5) Possible values of DD are 2-digit numeric in [01, ..., 31] (depending on the month).
- (6) Pattern: DIGIT{4}-DIGIT{2}-DIGIT{2}
- (7) Used by: [EAUPChainRetrievalRequest](#), [HotspotListRequest](#), [AUPChainRetrievalRequest](#), [AUPChain](#), [MCDMOnlyCancelRequest](#), [IncrementalDatasetSummary](#), [AUPSummary](#), [MCDMTopicUpdateRequest](#), [AIMListRequest](#), [MCDMTopicListRequest](#), [CompleteDatasetSummary](#), [Rerout-](#)

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[ingCancelRequest](#), [EAUPChain](#), [EAUPIdentification](#), [IncrementalDatasetQueryCriteria](#), [Tactical-ConfigurationPlan](#), [TacticalConfigurationRetrievalRequest](#), [HotspotPlans](#), [RegulationCancelRequest](#), [ATFCMSituationRequest](#), [CompleteDatasetQueryCriteria](#), [DateYearMonthDayPeriod](#), [RegulationProposalRevocationRequest](#).

4.11. DateYearMonthDayPeriod

(1) Left-closed, right-opened period of days.

(2) Attributes:

a) **DateYearMonthDay** *wef* (Optional)

Start day of the period.

If left to null, set to the current date.

Constraint: See [INVALID_PERIOD](#)

b) **DateYearMonthDay** *unt* (Optional)

End day of the period.

If left to null, set to infinity.

Note that if *wef* is equal to *unt*, the period is empty.

Constraint: See [INVALID_PERIOD](#)

(3) Constraint:

a)	Name	INVALID_PERIOD
	Attributes	wef , unt
	Description	<i>wef</i> must be less or equal to <i>unt</i> .

(4) Used by: [CompleteDatasetQueryCriteria](#), [AIMSummary](#), [IncrementalDatasetQueryCriteria](#).

4.12. typedef<int> DistanceM

(1) Measure of the distance between two points expressed as an integer amount of meters.

(2) Range: [0, ∞[.

(3) Used by: [OtherInformation](#), [AerodromeDAL](#), [PointDAL](#), [Flight](#), [RegulationExceptionalConstraint](#).

4.13. typedef<int> DistanceNM

(1) Measure of the distance between two points expressed as an integer amount of nautical miles.

(2) Range: [0, ∞[.

(3) Used by: [ReferencePoint](#), [FlightPoint](#), [RouteInfo](#), [RoutingAssistanceReplyDataResult](#), [DeltaEntry](#), [Flight](#), [TargetTime](#), [FlightRestriction](#), [FlightAirspace](#).

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4.14. typedef<long> Duration

- (1) Time duration in seconds.
- (2) Range: [0, ∞[.

4.15. typedef<string> DurationHourMinute

- (1) String representation of a duration (with minute precision).
- (2) Its format is "hhmm" (note the absence of ":" (colon) character — as this is not a time in day). Example: "0850" (duration of 8 hours 50 minutes).
- (3) Possible values of hh are 2-digit numeric in [00, ..., 99].
- (4) Possible values of mm are 2-digit numeric in [00, ..., 59].
- (5) Pattern: DIGIT{4}
- (6) Used by: [GeneralAPIRequest](#), [ArrivalInformation](#), [RoutingAssistanceReplyDataResult](#), [ShiftHourMinute](#), [OTMVPlan](#), [HotspotPlans](#), [CDMInfo](#), [EnrouteDelay](#), [CountsInterval](#), [OTMVWithDuration](#), [HotspotId](#), [FlightPlan](#), [UpdateDPIRequest](#), [HotspotListRequest](#), [OTMVSustained](#), [RevisionTimes](#), [CountsCalculationTypeAndInterval](#), [OTMVPlans](#), [RunwayConfiguration](#), [OTMV](#), [ReadyStatus](#), [EstimatedElapsedTimeAtLocation](#), [RegulationOrMCDMOnly](#), [FlightListByHotspotRequest](#), [RouteInfo](#), [Flight](#), [FlightPlanUpdate](#), [SupplementaryInformation](#).

4.16. typedef<string> DurationHourMinuteSecond

- (1) String representation of a duration (with minute precision).
- (2) Its format is "hhmmss" (note the absence of ":" (colon) character — as this is not a time in day). Example: "085032" (duration of 8 hours 50 minutes 32 seconds).
- (3) Possible values of hh are 2-digit numeric in [00, .., 99].
- (4) Possible values of mm are 2-digit numeric in [00, ..., 59].
- (5) Possible values of ss are 2-digit numeric in [00, ..., 59].
- (6) Pattern: DIGIT{6}
- (7) Used by: [CDMInfo](#), [Flight](#), [FlightAirspace](#).

4.17. typedef<long> DurationMinute

- (1) Time duration in minutes
- (2) Range: [0, ∞[.
- (3) Used by: [DepartureData](#), [SlotZone](#).

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4.18. Error

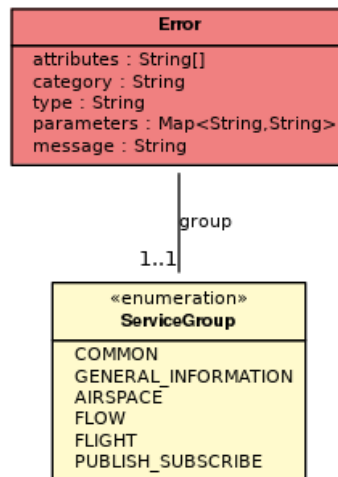


Figure 4.2. Error Class Diagram

- (1) Description of a NOP/B2B error — see [Essentials - Error And Warning Reporting](#).
- (2) Attributes:
 - a) **Set<string> attributes** (*Optional*)
Set of attributes to which this Error applies.
Can be empty for errors that do not apply to attributes, like SLA errors.
Constraint: Size must be comprised between 0 and ∞ .
 - b) **[ServiceGroup](#) group** (*Mandatory*)
 - c) **string category** (*Mandatory*)
Constraint: Pattern: (ALPHA|_){1,100}
 - d) **string type** (*Mandatory*)
Constraint: Pattern: (ALPHA|DIGIT|_){1,100}
 - e) **Map<string,string> parameters** (*Optional*)
Name/value pairs providing contextual information on the error.
Each key and value in the map can contain maximum 1000 printable characters.
Empty if the ErrorType of type does not define parameters, otherwise contains all keys defined for the ErrorType of type.
Constraint: Size must be comprised between 0 and ∞ .
 - f) **string message** (*Optional*)
Error message if any — the error message is not part of the B2B contract, i.e. the error message may or may not be provided, and its content may change at any time.
The message may contain substitution variables if the ErrorType of type has parameters.
Such a substitution variable is indicated as "{<parameter_key>}", e.g. if a parameter

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START_POINT is defined for the ErrorType of type and if a message contains it, it is indicated in message as "{{START_POINT}}". Note that an Error may contain parameters that are not used in message.
Maximum 1000 printable characters.

- (3) Used by: [Reply](#).

4.19. <<strict enumeration>> ErrorCode

- (1) Lists the possible error categories for this service group — see [Essentials - Error And Warning Reporting](#).

- (2) Values:

- a) **GEN**
single, general category for Common error types

4.20. <<strict enumeration>> ErrorType

- (1) Lists the possible error types for this service group — see [Essentials - Error And Warning Reporting](#).

- (2) Values:

- a) **ATTRIBUTE_CANNOT_BE_NULL**
- b) **ATTRIBUTE_MUST_BE_NULL**
- c) **CHOICE_OVERFLOW**
This error is sent when more than one attribute involved in the choice have been set — no parameter
- d) **INVALID_ATTRIBUTE_VALUE**
- e) **INVALID_COLLECTION_SIZE**
- f) **MISSING_CHOICE_VALUE**
A choice is a constraint such that one attribute among a list of attributes must be set to a non-null value — this error is returned when no attribute involved in the choice has been set — no parameter
- g) **REQUESTED_ATTRIBUTE_NOT_ALLOWED**
This error is sent in replies to some requests where the client application can define itself the attributes to be returned; in some exceptional circumstances, a request may be able to specify an attribute that is actually not allowed in these specific circumstances — parameters:
- i) "ATTRIBUTE": unsupported requested attribute, expressed as a string (up to the client to cast it to the concerned enumeration)
- h) **UNKNOWN**

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i) **UNSUPPORTED_VERSION**

This error is sent when an element in the request is not supported by the current version
— no parameter

4.21. <<strict enumeration>> EstimateQualifier

- (1) This type is used to qualify a value in terms of it being either an estimated value or an actual value.
- (2) It can be used to qualify any value, such as a time, a position, a flight level, weight, etc.
- (3) Values:
 - a) **ACTUAL**
 - b) **ESTIMATED**
- (4) Used by: [LandingInformation](#), [DepartureInformation](#), [EnRouteInformation](#).

4.22. <<strict enumeration>> ExecutionEnvironment

- (1) Defines the execution environment where the NM B2B provider agent is running.
- (2) Values:
 - a) **DEV**
Development platform.
 - b) **OPS**
Operational platform.
 - c) **OPT**
Operational test platform.
 - d) **PRE_RELEASE**
Test platform.
- (3) Used by: [NMPlatform](#).

4.23. File

- (1) Describes the general properties of a file type.
- (2) Attributes:
 - a) **FileId id** (*Mandatory*)
Unique id of a file.
 - b) **FileType type** (*Mandatory*)
Final type of the file — see specific reference manuals where file port types are defined.

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- c) **[DateTimeSecond](#) releaseTime** (*Mandatory*)

Production time of the file.

- d) **int fileLength** (*Mandatory*)

The length of the file in bytes.

Constraint: Range: $[0, \infty[$.

- (3) Extended by: [B2BInfoFile](#), [AIXMFile](#).

4.24. typedef<string> FileId

- (1) Unique id of a file.

- (2) Pattern: (ALPHA|DIGIT|. |_|/){1,200}

- (3) Used by: [File](#).

4.25. typedef<string> FileType

- (1) Type of a file — not an enumeration because concrete file types are defined in specific service groups.

- (2) Pattern: ALPHA{1,50}

- (3) Used by: [File](#).

4.26. LastUpdate

- (1) Describes when and by whom an object has been last updated.

- (2) Attributes:

- a) **[DateTimeSecond](#) timestamp** (*Mandatory*)

Time at which the object was created or last updated.

- b) **[UserId](#) userId** (*Mandatory*)

Id of the NOP user who created or last updated the object.

- c) **[AirNavigationUnitId](#) airNavigationUnitId** (*Optional*)

The ANU id associated to userId, if known by NM.

- (3) Used by: [AUPDeletionRequest](#), [AUPSummary](#).

4.27. Latitude

- (1) Represents a latitude.

- (2) Attributes:

- a) **string angle** (*Mandatory*)

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Expressed in degrees, minutes and seconds. Note the absence of ":" (colon) separator.

Constraint: Pattern: DIGIT{6}

- b) **LatitudeSide side** (*Mandatory*)
Indicates the latitude side: NORTH or SOUTH.

- (3) Used by: [EstimatedElapsedTimeAtLocation](#), [Position](#).

4.28. <<enumeration>> LatitudeSide

- (1) The side of the latitude.

- (2) Values:

- a) **NORTH**
b) **SOUTH**

- (3) Used by: [Latitude](#).

4.29. <<enumeration>> LogicalOperator

- (1) Represents a logical operator, limited at the moment to AND and OR.

- (2) Values:

- a) **AND**
b) **OR**

- (3) Used by: [IRDesignatorFilter](#), [IRUUIDFilter](#).

4.30. typedef<string> LongDurationHourMinute

- (1) String representation of a long duration with minute precision.

- (2) Its format is "hhhhhhhhmm" . Example: "73828" (duration of 738 hours 28 minutes).

- (3) Possible values of hhhhhhhh are 8-digit numeric in [00000000, ..., 99999999].

- (4) Possible values of mm are 2-digit numeric in [00, ..., 59].

- (5) Pattern: DIGIT{4,10}

- (6) Used by: [ATFCMSituationDelays](#), [DeltaATFCMSituationRegulation](#), [SignificantDeltaDuration](#), [ATFCMSituationRegulation](#).

4.31. Longitude

- (1) Represents a longitude.

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(2) Attributes:

- a) **string angle** (*Mandatory*)
Expressed in degrees, minutes and seconds. Note the absence of ":" (colon) separator.
Constraint: Pattern: DIGIT{6,7}
- b) **LongitudeSide side** (*Mandatory*)
Indicates the longitude side: EAST or WEST.

(3) Used by: [EstimatedElapsedTimeAtLocation](#), [Position](#).

4.32. <<enumeration>> LongitudeSide

(1) The side of a longitude.

(2) Values:

- a) **EAST**
- b) **WEST**

(3) Used by: [Longitude](#).

4.33. typedef<string> NMB2BProviderVersion

(1) The unique identifier of the software running the NM B2B provider agent.

(2) Example: 19.5.0.4.76 or FB599_19_5_0.34

(3) **Note**

When the value of NMB2BProviderVersion has a prefix alphanumeric (FB599 or NM-VP,...), it means that the NMB2BProvider is hosting an NM release corresponding to an exercise. This is typically the case when using the NMVP platform.

(4) Used by: [NMReleaseInformationReply](#).

4.34. typedef<string> NMB2BVersion

(1) It corresponds to the version of the Web Services supported by the NM B2B provider agent.

(2) The NM B2B provider agent can support several NM B2B versions. The NM B2B version is supported during two years after its deployment.

(3) The NM B2B version identifier of any service artefact is the version identifier of its NM release, namely 19.0.0, 19.5.0, and so forth.

(4) Pattern: DIGIT{2}.DIGIT{1}.DIGIT{1}

(5) Used by: [NMB2BAddendaErrataRequest](#), [NMB2BWSDLsRequest](#), [NMB2BReferenceManuals-Request](#), [NMB2BScenariosRequest](#), [NMReleaseInformationReply](#).

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4.35. NMPlatform

- (1) NM B2B consumer can be connected to different types of platform depending on the end point used. The NM platform is reflected in the URL used to access the NM B2B provider agent.
- (2) Attributes:
 - a) **ExecutionEnvironment** **executionEnvironment** (*Mandatory*)
Defines the execution environment where the NM B2B provider agent is running.
Examples: OPS
 - b) **string** **applicationInstance** (*Mandatory*)
Unique name of the system running the NM B2B provider agent.
Examples: CUA_OPA
Constraint: Pattern: UALPHA{3}_UALPHA{2}(UALPHA|DIGIT){1}
- (3) Used by: [NMReleaseInformationReply](#).

4.36. typedef<string> NMRelease

- (1) NM Release.
- (2) Example: 19.5.0.
- (3) Pattern: DIGIT{2}.DIGIT{1}.DIGIT{1}
- (4) Used by: [Subscription](#), [NMReleaseInformationReply](#).

4.37. typedef<string> PlanDataId

- (1) Opaque identifier representing the version of a plan.
- (2) Pattern: (0|F|S)(DIGIT){14}(UALPHA|DIGIT){0,40}
- (3) Used by: [HotspotPlans](#), [RegulationCancelRequest](#), [MCDMOnlyCancelRequest](#), [Measure](#), [MCD-MTopic](#), [MCDMStateUpdateRequest](#), [RegulationProposalFilingRequest](#), [ReroutingCancelRequest](#), [RegulationProposalRevocationRequest](#), [TacticalConfigurationPlan](#).

4.38. Position

- (1) Represents a position, i.e. a latitude and a longitude.
- (2) Attributes:
 - a) **Latitude** **latitude** (*Mandatory*)
 - b) **Longitude** **longitude** (*Mandatory*)
- (3) Used by: [FlightRestriction](#), [GeoPoint](#).

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4.39. <<enumeration>> ReceivedOrSent

- (1) Convenience type used in situations where NM needs to express whether an object (typically a message) was received or sent by the NM.
- (2) Values:
 - a) **RECEIVED**
 - b) **SENT**
 - c) **UNKNOWN**
- (3) Used by: [Flight](#).

4.40. <<abstract>> Reply

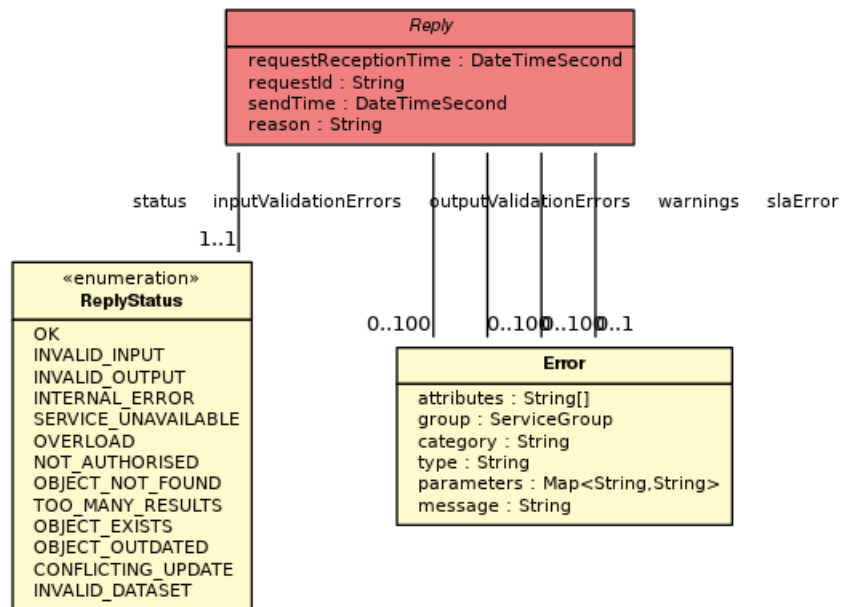


Figure 4.3. <<abstract>> Reply Class Diagram

- (1) Abstract ancestor of all NOP/B2B replies.
- (2) No XML reply is sent if the request is such that the system returned an HTTP error instead — see [Essentials - Error And Warning Reporting](#).
- (3) Otherwise, the corresponding concrete reply type message is returned.
- (4) Attributes:
 - a) **DateTimeSecond requestReceptionTime** (*Optional*)
UTC time at which the request was received at NM.

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Always set when an XML reply is returned, regardless of the possible exceptions that occurred within the request processing.

- b) **string requestId** (*Optional*)
Identification of the request. This id is not unique across time: the request is uniquely identified via two attributes: requestReceptionTime and requestId.
Always set when an XML reply is returned, regardless of the possible exceptions that occurred within the request processing.
- c) **[DateTimeSecond](#) sendTime** (*Optional*)
UTC time at which NM has sent the reply.
Always set when an XML reply is returned, regardless of the possible exceptions that occurred within the request processing.
- d) **[ReplyStatus](#) status** (*Mandatory*)
Specifies if the request was successfully processed (value is ReplyStatus.OK) or not (value is not ReplyStatus.OK).
Always set when an XML reply is returned, regardless of the possible exceptions that occurred within the request processing.
- e) **[Error\[\]](#) inputValidationErrors** (*Optional*)
Contains the input validation errors, if any.
Set to null if the request successfully passed input validations (i.e. status is not set to ReplyStatus.INVALID_INPUT).
Input validation error types are described in [Essentials - Error And Warning Reporting](#).
Constraint: Size must be comprised between 0 and 100.
- f) **[Error\[\]](#) outputValidationErrors** (*Optional*)
Contains the output validation errors, if any.
Set to null if the request successfully passed output validations (i.e. status is not set to ReplyStatus.INVALID_OUTPUT).
This is only used in test context.
Constraint: Size must be comprised between 0 and 100.
- g) **[Error\[\]](#) warnings** (*Optional*)
See [Essentials - Error And Warning Reporting](#).
Left null if there is no returned warning.
Constraint: Size must be comprised between 0 and 100.
- h) **[Error](#) slaError** (*Optional*)
Describes an error caused by a SLA violation.
Unused in current release: always null.
- i) **string reason** (*Optional*)
This attribute is used to provide a detailed explanation about the returned reply status when other than ReplyStatus.OK.
Optionally set when an XML reply is returned with reply status different than ReplyStatus.OK.

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- (5) Extended by: [MeasureOpLogRetrievalReply](#), [SubscriptionListReply](#), [ScenarioReroutingRetrievalReply](#), [SimulationAvailabilityReply](#), [SubscriptionCreationReply](#), [RegulationCreationReply](#), [TargetTakeOffAPIReply](#), [GeneralAPIReply](#), [PredictedDPIReply](#), [AUPValidationReply](#), [ATCDPIReply](#), [SectorConfigurationPlanUpdateReply](#), [MessagePullReply](#), [ScenarioRegulationRetrievalReply](#), [FlightListByAerodromeSetReply](#), [AUPChainRetrievalReply](#), [AUPRSAAllocationExpansionReply](#), [ACC3AccreditationListReplacementReply](#), [TrafficCountsByPointReply](#), [HotspotPlanUpdateReply](#), [NMB2BAddendaErrataReply](#), [OTMVPlanRetrievalReply](#), [MCDMOnlyCancelReply](#), [FlightPlanUpdateReply](#), [MCDMOnlyCreationReply](#), [HotspotListReply](#), [RegulationProposalRevocationReply](#), [FlightUpdateReply](#), [CompleteAIXMDatasetReply](#), [MCDMTopicUpdateReply](#), [ReroutingCreationReply](#), [EAUPChainRetrievalReply](#), [SubscriptionPauseReply](#), [RegulationListReply](#), [FlightListByAircraftOperatorReply](#), [EAUPCDRReply](#), [CapacityPlanUpdateReply](#), [TrafficVolumeActivationPlanUpdateReply](#), [FlightListByPointReply](#), [FlightListByHotspotReply](#), [FlightListByAirspaceReply](#), [TrafficCountsByAircraftOperatorReply](#), [TrafficCountsByTrafficVolumeReply](#), [RegulationProposalFilingReply](#), [UpdateFlightsInMeasureReply](#), [TargetDPISequencedReply](#), [FlightListByKeysReply](#), [CancelDPIReply](#), [AIMListReply](#), [ReroutingUpdateReply](#), [RunwayConfigurationPlanUpdateReply](#), [ScenarioMCDMOnlyRetrievalReply](#), [FlightListByAerodromeReply](#), [FlightPlanValidationReply](#), [FlightListByMeasureReply](#), [NMReleaseInformationReply](#), [SectorConfigurationPlanRetrievalReply](#), [TrafficCountsByAerodromeSetReply](#), [TargetDPITargetReply](#), [EAUPRSACompareReply](#), [AUPGetManageableRouteSegmentsForAMCAndRouteReply](#), [AUPUpdateReply](#), [SimulationStopReply](#), [AUPGetManageableRoutesForAMCReply](#), [FlightPlanCancellationReply](#), [TCOAuthorisationListUpdateReply](#), [RegulationProposalListReply](#), [FilingStatusReply](#), [RegulationProposalUpdateReply](#), [TrafficCountsByAerodromeReply](#), [TrafficVolumeActivationPlanRetrievalReply](#), [AUPRetrievalReply](#), [NMB2BScenariosReply](#), [SimulationStartReply](#), [MCDMTopicListReply](#), [ScenarioListReply](#), [EarlyDPIReply](#), [SubscriptionHistoryReply](#), [ATFCMSituationReply](#), [EAUPCDRCompareReply](#), [AUPServiceConfigurationReply](#), [OTMVPlanUpdateReply](#), [CapacityPlanRetrievalReply](#), [SubscriptionDeletionReply](#), [EAUPRSAReply](#), [TrafficCountsByAirspaceReply](#), [AIMRetrievalReply](#), [FlightListByAircraftRegistrationMarkReply](#), [FlightPlanCreationReply](#), [AUPDeletionReply](#), [RegulationUpdateReply](#), [SubscriptionRetrievalReply](#), [ReroutingCancelReply](#), [TCOAuthorisationListReplacementReply](#), [NetworkImpactAssessmentRetrievalReply](#), [FlightArrivalReply](#), [FlightListByTrafficVolumeReply](#), [MCDMOnlyListReply](#), [FlightDepartureReply](#), [TargetTimeOverAPIReply](#), [RegulationCancelReply](#), [SimulationListReply](#), [FlightPlanListReply](#), [RunwayConfigurationPlanRetrievalReply](#), [AUPCreationReply](#), [NMB2BWSDLsReply](#), [MCDMOnlyUpdateReply](#), [IncrementalAIXMDatasetReply](#), [SubscriptionResumeReply](#), [MCDMTopicMessageRetrievalReply](#), [MCDMStateUpdateReply](#), [NMB2BReferenceManualsReply](#), [FlightRetrievalReply](#), [RoutingAssistanceReply](#), [FlightDelayReply](#), [ReroutingListReply](#).

4.41. <<strict enumeration>> ReplyStatus

- (1) Describes if a request was successfully processed, and if not, gives an overview of why.
- (2) Values:
- a) **CONFLICTING_UPDATE**
Error sent when a request attempts to update an object which conflicts with parallel changes.
 - b) **INTERNAL_ERROR**
Indicates that the request processing failed due to an internal error — this is a permanent error condition.

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- c) **INVALID_DATASET**
Error sent when a request attempts to update an object on an invalid dataset. This error occurs either when the plan has not been transferred (for OPERATIONAL dataset) or when the cut-off time has been reached (for FORECAST dataset) or when the simulation has been stopped.
- d) **INVALID_INPUT**
Indicates that the request processing failed due to the detection of an invalid input; the caller is assumed to correct the input data.
- e) **INVALID_OUTPUT**
Indicates that the request processing failed due to the detection of an invalid output. This is only used in test context.
- f) **NOT_AUTHORIZED**
Indicates that the certificate owner is not entitled to issue the request.
- g) **OBJECT_EXISTS**
Error sent when a request attempts to create an object that already exists in the NM system.
- h) **OBJECT_NOT_FOUND**
Indicates that the request refers to an object that does not exist in the NM system.
- i) **OBJECT_OUTDATED**
Error sent when a request attempts to update an object of which it does not have the latest version (i.e. the object was updated concurrently, see also [LastUpdate](#) data type).
- j) **OK**
The request was successfully processed.
- k) **OVERLOAD**
Indicates that the request processing failed due to the temporary overload of some component on the request processing path.
- l) **SERVICE_UNAVAILABLE**
Indicates that the request processing failed due to the temporary unavailability of some component on the request processing path.
- m) **TOO_MANY_RESULTS**
Error sent when a request produces too many results; the client application is assumed to refine the request arguments and send it again to the NM system.

(3) Used by: [Reply](#).

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4.42. <<abstract>> Request

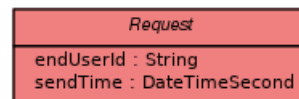


Figure 4.4. <<abstract>> Request Class Diagram

- (1) Abstract ancestor of all NOP/B2B requests.
- (2) Attributes:
 - a) **string endUserId** (*Optional*)
The id of the end user of the client application, hence typically *not* the id of the certificate owner. Subsequently used to build usage statistics.
It is recommended to pass it.
Length must be in [0,30]. Alphabetic, numeric and underscore characters only.
Constraint: Pattern: (ALPHA|DIGIT|_){0,30}
 - b) **DateTimeSecond sendTime** (*Mandatory*)
UTC time at which the client application has sent the request.
- (3) Extended by: [AUPGetManageableRoutesForAMCRequest](#), [CompleteAIXMDatasetRequest](#), [MCDMOnlyCreationRequest](#), [SimulationAvailabilityRequest](#), [NMReleaseInformationRequest](#), [AUPRSAAllocationExpansionRequest](#), [RegulationProposalRevocationRequest](#), [MeasureOpLogRetrievalRequest](#), [NetworkImpactAssessmentRetrievalRequest](#), [MCDMOnlyUpdateRequest](#), [SubscriptionRetrievalRequest](#), [AUPValidationRequest](#), [SimulationListRequest](#), [MeasureListRequest](#), [FlightInformationUpdateRequest](#), [SubscriptionPauseRequest](#), [EAUPChainRetrievalRequest](#), [AIMRetrievalRequest](#), [SectorConfigurationPlanUpdateRequest](#), [TCOAuthorisationListReplacementRequest](#), [MCDMTopicListRequest](#), [RegulationProposalFilingRequest](#), [AUPChainRetrievalRequest](#), [FlightPlanListRequest](#), [TrafficCountsRequest](#), [AUPCreationRequest](#), [SubscriptionResumeRequest](#), [SubscriptionListRequest](#), [ReroutingUpdateRequest](#), [HotspotPlanUpdateRequest](#), [AUPRetrievalRequest](#), [AbstractEAUPRSARequest](#), [NMB2BScenariosRequest](#), [RegulationUpdateRequest](#), [SimulationStopRequest](#), [SimulationStartRequest](#), [SubscriptionDeletionRequest](#), [TacticalConfigurationRetrievalRequest](#), [CapacityPlanUpdateRequest](#), [FilingStatusRequest](#), [ScenarioListRequest](#), [UpdateFlightsInMeasureRequest](#), [AIMListRequest](#), [ScenarioMeasureRetrievalRequest](#), [RegulationProposalUpdateRequest](#), [RegulationCancelRequest](#), [FlightRetrievalRequest](#), [ACC3AccreditationListReplacementRequest](#), [SubscriptionHistoryRequest](#), [RoutingAssistanceRequest](#), [MessagePullRequest](#), [HotspotListRequest](#), [FlightPlanValidationRequest](#), [ReroutingCreationRequest](#), [MCDMTopicMessageRetrievalRequest](#), [TrafficVolumeActivationPlanUpdateRequest](#), [NMB2BAddendaErrataRequest](#), [NMB2BReferenceManualsRequest](#), [TCOAuthorisationListUpdateRequest](#), [MCDMStateUpdateRequest](#), [AUPServiceConfigurationRequest](#), [OTMVPlanUpdateRequest](#), [FilingRequest](#), [AbstractEAUPCDRRequest](#), [RegulationCreationRequest](#), [ReroutingCancelRequest](#), [AUPGetManageableRouteSegmentsForAMCAndRouteRequest](#), [FlightListRequest](#), [AUPDeletionRequest](#), [RunwayConfigurationPlanUpdateRequest](#), [AUPUpdateRequest](#), [ATFCMSituationRequest](#), [IncrementalAIXMDatasetRequest](#), [SubscriptionCreationRequest](#), [MCDMOnlyCancelRequest](#), [MCDMTopicUpdateRequest](#), [NMB2BWSDLsRequest](#).

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4.43. <<strict enumeration>> ServiceGroup

(1) Lists the possible NOP/B2B service groups.

(2) Values:

- a) **AIRSPACE**
- b) **COMMON**
- c) **FLIGHT**
- d) **FLOW**
- e) **GENERAL_INFORMATION**
- f) **PUBLISH_SUBSCRIBE**

(3) Used by: [Error](#).

4.44. ShiftHourMinute

(1) Representation of a signed duration (with minute precision). A negative shift represents a shift in the past.

(2) Attributes:

- a) **[Sign](#) sign** (*Mandatory*)
- b) **[DurationHourMinute](#) value** (*Mandatory*)

(3) Used by: [Flight](#).

4.45. <<enumeration>> Sign

(1) Convenience type used to express a sign in a signed type.

(2) Values:

- a) **MINUS**
- b) **PLUS**

(3) Used by: [ShiftHourMinute](#).

4.46. typedef<string> SimulationId

(1) Unique id of an NM simulation.

(2) Pattern: ANY{1, 200}

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- (3) Used by: [SimulationListRequest](#), [DatasetReference](#), [SimulationIdentifier](#).

4.47. SimulationIdentifier

- (1) The identifier of a simulation. See Forecast, Operational and Simulation DataSets.

- (2) Attributes:

- a) **[SimulationType](#) simulationType** (*Mandatory*)
Describes the different types of simulations.
- b) **[SimulationId](#) simulationId** (*Mandatory*)
The id of the simulation.
Constraint: See [INVALID_SIMULATION_ID](#)

- (3) Constraint:

a)

Name	INVALID_SIMULATION_ID
Attribute	simulationId
Description	Invalid Simulation Id.

- (4) Used by: [Dataset](#).

4.48. <<strict enumeration>> SimulationType

- (1) Describes the different types of simulations.

- (2) Values:

- a) **NMOC_MANAGED_SIMULATION**
The simulation is managed (start/stop) and prepared by NMOC for the other users (B2B & B2C) to have a look at the results.
Optionally the users can create or modify the measures and tactical updates to evaluate the what-if effects.
- b) **STANDALONE_SIMEX**
The simulation is a standalone SIMulation Experiment (SIMEX).
Special future events are typically prepared and simulated on SIMEX with specially modified environment (CACD) data and forecasted traffic.
It can be used as a reference for other simulations to evaluate different alternatives and compare with the STANDALONE_SIMEX as reference.
The simulation is managed (start/stop) and prepared by NMOC for the other users (B2B & B2C) to have a look at the results.
Optionally the users can create or modify the measures and tactical updates.
- c) **USER_MANAGED_SIMULATION**
The simulation is managed (start/stop) and prepared by the users (via B2B & B2C) to simulate some measures and evaluate their effect.

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In addition the user can request other users or NMOC to have a look at proposed solution or to contribute to the simulation

- (3) Used by: [SimulationIdentifier](#).

4.49. **typedef<int> TemperatureC**

- (1) Temperature in degrees Celcius.
(2) Range: [- 100, 100 [.

4.50. **typedef<long> Time**

- (1) UTC time, expressed as the number of seconds since the Epoch.
(2) Range:] - ∞ , ∞ [.

4.51. **typedef<string> TimeHourMinute**

- (1) String representation of a UTC time in a day, limited to the minute precision.
(2) Its format is "hh:mm".
(3) Possible values of hh are 2-digit numeric in [00, ..., 23].
(4) Possible values of mm are 2-digit numeric in [00, ..., 59].
(5) Pattern: DIGIT{2}:DIGIT{2}
(6) Used by: [TimeHourMinutePeriod](#).

4.52. **TimeHourMinutePeriod**

- (1) Left-closed, right-opened period of a time in a day.
(2) Attributes:
a) **[TimeHourMinute](#) wef** (*Optional*)
Start time of the period.
If left to null, set to "00:00".
Constraint: See [INVALID_PERIOD](#)
b) **[TimeHourMinute](#) unt** (*Optional*)
End time of the period.
If left to null, set to "24:00".
Constraint: See [INVALID_PERIOD](#)
(3) Constraint:

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a)	Name	INVALID_PERIOD
	Attributes	wef , unt
	Description	wef must be less or equal to unt.

- (4) Used by: [WeeklyScheduleItem](#), [DepartureTolerance](#).

4.53. typedef<string> Timestamp

- (1) String representation of a timestamp (Gregorian Calendar - UTC).
- (2) Its format is "YYYY-MM-DD hh:mm:ss SSS". Example: "2013-12-01 11:37:25 245".
- (3) Possible values of YYYY, MM and DD in "YYYY-MM-DD hh:mm:ss" are defined in [DateYear-MonthDay](#). SSS represents milliseconds.
- (4) Pattern: DIGIT{4}-DIGIT{2}-DIGIT{2} DIGIT{2}:DIGIT{2}:DIGIT{2} DIGIT{3}
- (5) Used by: [PSMessage](#), [SubscriptionTechnicalMessage](#), [Subscription](#), [SubscriptionHistoryItem](#).

4.54. typedef<string> UserId

- (1) Id of a NOP user, e.g. a certificate owner id.
- (2) Pattern: ANY{1,11}
- (3) Used by: [LastUpdate](#), [LifeCycleEvent](#), [UserManagedSimulation](#).

4.55. typedef<string> UUID

- (1) UUID in its canonical form: see [UUID](#)
- (2) Examples: "550e8400-e29b-41d4-a716-446655440000".
- (3) Pattern: ANY{36}
- (4) Used by: [SubscriptionDeletionRequest](#), [AbstractEAUPRSAResponse](#), [PSMessage](#), [SubscriptionTechnicalMessage](#), [Subscription](#), [SubscriptionHistoryItem](#), [AUPGetManageableRoutesForAMCReply](#), [AUPGetManageableRouteSegmentsForAMCAndRouteRequest](#), [SubscriptionResumeRequest](#), [AbstractEAUPCDRRequest](#), [SubscriptionPauseRequest](#), [SubscriptionRetrievalRequest](#), [SubscriptionHistoryRequest](#), [IRUUIDFilter](#), [BusinessPSMessage](#).

4.56. <<strict enumeration>> WeekDay

- (1) WeekDay
- (2) Values:

a) **FRIDAY**

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- b) **MONDAY**
- c) **SATURDAY**
- d) **SUNDAY**
- e) **THURSDAY**
- f) **TUESDAY**
- g) **WEDNESDAY**

(3) Used by: [WeeklyScheduleItem](#).

4.57. WeeklySchedule

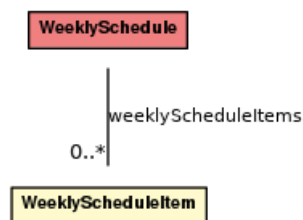


Figure 4.5. *WeeklySchedule* Class Diagram

(1)

(2) Attributes:

- a) **Set<[WeeklyScheduleItem](#)> weeklyScheduleItems** (Mandatory)
Constraint: Size must be comprised between 0 and ∞ .

(3) Used by: [ScenarioAttributes](#).

4.58. WeeklyScheduleItem

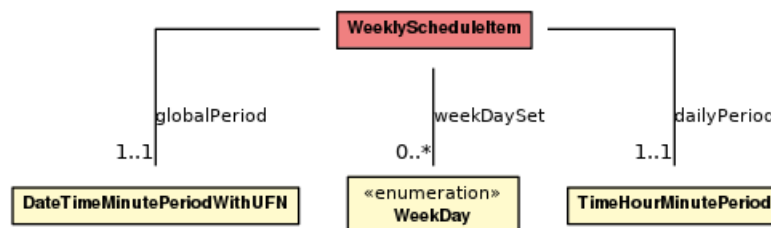


Figure 4.6. *WeeklyScheduleItem* Class Diagram

(1)

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(2) Attributes:

- a) [DateTimeMinutePeriodWithUFN](#) **globalPeriod** (Mandatory)
- b) **Set<WeekDay>** **weekDaySet** (Mandatory)
Constraint: Size must be comprised between 0 and 7.
- c) [TimeHourMinutePeriod](#) **dailyPeriod** (Mandatory)

(3) Used by: [WeeklySchedule](#).

4.59. **typedef<int>** **WeightKg**

- (1) Weight in kilograms.
- (2) Range: [0 , 999999].
- (3) Used by: [BasicTrajectoryData](#).

4.60. **typedef<string>** **Year**

- (1) String representation of a year (Gregorian Calendar - UTC).
- (2) Its format is "YYYY". Example: "2010".
- (3) Possible values of YYYY are 4-digit numeric in [0001, ..., 9998].
- (4) Pattern: DIGIT{4}

4.61. **<<enumeration>>** **YesNoUnknown**

- (1) Convenience type used in situations where NM needs to express a choice between "yes", "no" and "NM does not know".
- (2) Values:
 - a) **NO**
 - b) **UNKNOWN**
 - c) **YES**

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Chapter 5. PRE-OPS Testing

- (1) [See the PRE-OPS platform setup needed for the AUP/UUP management.](#)

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- for faults, the Systems Incident Management Procedure, ref. STD-CM/PRO/SIMP
- for changes, the IT Change Management Process, ref. STD/ITSM/CHG