



NM 23.0.0 - NOP/B2B Release Notes - NM 23.0

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DNM		EUROCONTROL
Document Title: NM 23.0.0 - NOP/B2B Release Notes - NM 23.0		Document Reference: B2B/23.0.0/ReleaseNotes_NM_23_0

Table of Contents

1 NM 23.0	7
1.1 AirspaceServices	7
1.1.1 Overview	7
1.1.2 Enhancements & New Features	7
1.1.2.1 From AIXM 5.1 to 5.1.1.	7
1.1.2.1.1 Context	7
1.1.2.1.2 Change	7
1.1.2.2 Export Sunrise/Sunset times for aerodromes.	7
1.1.2.2.1 Context	7
1.1.2.2.2 Change	8
1.1.2.3 More Navaid types.	8
1.1.2.3.1 Context	8
1.1.2.3.2 Change	9
1.1.2.3.3 Examples:	9
1.1.3 Fixes and Corrections	9
1.1.4 Known Issues, Limitations and Restrictions	9
1.2 FlightServices	10
1.2.1 Overview	10
1.2.2 Enhancements & New Features	10
1.2.2.1 Early provision of AIRAC data for Flight Filing evaluation.	10
1.2.2.1.1 Context	10
1.2.2.1.2 Change	10
1.2.2.2 Trajectory information in FIXM 4.1.	11
1.2.2.2.1 Context	11
1.2.2.2.2 Change	11
1.2.2.2.2.1 Deprecated B2B service requests.	11
1.2.2.2.2.2 Deprecated classes.	12
1.2.2.2.2.3 Modified classes.	12
1.2.2.2.2.4 Validation Rules Changes.	18
1.2.2.3 C-DPI with reason UNDO_ADPI.	19
1.2.2.3.1 Context	19
1.2.2.3.2 Change	19
1.2.2.4 CTOT extension request via A-DPI (Tower Update A-DPI).	19
1.2.2.4.1 Context	19
1.2.2.4.2 Change	19
1.2.2.5 Removal of T-DPI_p message.	20
1.2.2.5.1 Context	20
1.2.2.5.2 Change	21
1.2.2.6 Deicing status in DPI requests.	21
1.2.2.6.1 Context	21
1.2.2.6.2 Change	21
1.2.2.7 Enhance NM B2B Read services in support of efficient client use of NM B2B API Write Service.	21
1.2.2.7.1 Context	21
1.2.2.7.2 Change	21

DNM		EUROCONTROL
Document Title: NM 23.0.0 - NOP/B2B Release Notes - NM 23.0.0		Document Reference: B2B/23.0.0/ReleaseNotes_NM_23_0

1.2.3 Fixes and Corrections	22
1.2.3.1 Cannot update flight plan when ADEP/ADES/ALTN is ZZZZ	22
1.2.3.1.1 Context	22
1.2.3.1.2 Change	22
1.2.3.2 B2B service request TargetTimeOverAPIRequest is systematically rejected. ...	22
1.2.3.2.1 Context	22
1.2.3.2.2 Change	22
1.2.3.2.3 Scenario - Update the TTO API.	22
1.2.4 Known Issues, Limitations and Restrictions	24
1.3 FlowServices	24
1.3.1 Overview	24
1.3.2 Enhancements & New Features	25
1.3.2.1 New B2B service - flight exclusion & force CTOT.	25
1.3.2.1.1 Context	25
1.3.2.1.2 Change	25
1.3.2.1.2.1 Deprecated B2B service requests.	25
1.3.2.1.2.2 New B2B service request.	25
1.3.2.1.2.3 Deprecated classes.	25
1.3.2.1.2.4 New classes.	26
1.3.2.1.2.5 New attributes.	27
1.3.2.1.2.6 <u>Note</u> :	27
1.3.2.2 Improved Cherry pick feature.	27
1.3.2.2.1 Context	27
1.3.2.2.2 Change	27
1.3.2.3 Rerouting evolution.	28
1.3.2.3.1 Context	28
1.3.2.3.2 Change	28
1.3.2.3.2.1 Modified classes.	28
1.3.2.3.2.2 Deprecated classes.	28
1.3.2.3.2.3 New classes.	29
1.3.2.3.3 Mapping between attribute's value of old B2B versions and the new B2B version.	30
1.3.3 Fixes and Corrections	30
1.3.4 Known Issues, Limitations and Restrictions	30
1.4 PublishSubscribeServices	30
1.4.1 Overview	30
1.4.2 Enhancements & New Features	31
1.4.2.1 New fields in Pub/Sub flight data.	31
1.4.2.1.1 Change	31
1.4.3 Fixes and Corrections	31
1.4.3.1 B2B User unable to connect to AMQP OPS.	31
1.4.3.1.1 Context	31
1.4.3.1.2 Change	31
1.4.4 Known Issues, Limitations and Restrictions	31
DOCUMENT FINAL PAGE	32

DNM		EUROCONTROL
Document Title: NM 23.0.0 - NOP/B2B Release Notes - NM 23.0		Document Reference: B2B/23.0.0/ReleaseNotes_NM_23_0

List of Figures

1.1 SunriseSunsetTable feature extension:	8
1.2 Changes of BasicTrajectoryData class.	14
1.3 RouteTrajectory class.	16
1.4 TrajectoryPointPropertyType - FIXM 4.0.1.	16
1.5 TrajectoryPointPropertyType - FIXM 4.1.0.	17
1.6 FIXM Trajectory Role Name.	17
1.7 Flight DLH5AE1-EDDF-EBBR-16:25	23
1.8 Changes of Rerouting class.	28
1.9 Changes of ReroutingConstraints class.	29
1.10 Changes of ReroutingSourcesAndConstraints class.	29

DNM		EUROCONTROL
Document Title: NM 23.0.0 - NOP/B2B Release Notes - NM 23.0		Document Reference: B2B/23.0.0/ReleaseNotes_NM_23_0

List of Tables

1.1 Scenario steps 23

DNM		EUROCONTROL
Document Title: NM 23.0.0 - NOP/B2B Release Notes - NM 23.0		Document Reference: B2B/23.0.0/ReleaseNotes_NM_23_0

Chapter 1. NM 23.0

1.1. AirspaceServices

1.1.1. Overview

- (1) This document describes the changes introduced in NM 23.0 to the B2B Airspace service group.

1.1.2. Enhancements & New Features

1.1.2.1. From AIXM 5.1 to 5.1.1.

1.1.2.1.1. Context

- (1) The Airspace Structure and Airspace Availability services make extensive use of the AIXM model.
- (2) Until NM release 22.5 the version of AIXM used was 5.1.
- (3) The introduction of FIXM 4.1 in NM release 23.0, and in particular the coexistence of FIXM 4.1 and AIXM 5.1, has caused issues related to the use of the XML Linking Language (xlink).
- (4) Such issues were resolved in AIXM 5.1.1 by not including the xlink XSD in the AIXM 5.1.1 distribution (see AIXM website for more details).

1.1.2.1.2. Change

- (1) Starting from NM release 23.0 the new version of AIXM used by NM is 5.1.1.
- (2) The impact of the change in the exported airspace data is only limited to the following enumeration that has been corrected in AIXM 5.1.1:
CodeLevelTableDesignatorType: the value VFR_RVMS was misspelled and has now been corrected to VFR_RVSM.

- (3) **Note**

The use of AIXM 5.1.1 is limited to NM release 23.0. In order to ensure backward compatibility all NM releases prior to NM 23.0 continue to use AIXM 5.1.

1.1.2.2. Export Sunrise/Sunset times for aerodromes.

1.1.2.2.1. Context

- (1) In NM22.0 an AirportHeliport feature may define mixed flight rule operations (IFR/VFR/BOTH) via a timetable (e.g. IFR on weekdays, VFR on weekends). This timetable may refer to events such as sunrise (SR) and sunset (SS) that do not represent absolute times and their actual representation depends on the geographical position and time of the year. For example the airport could allow VFR flights until SS + 30 minutes and only IFR afterwards). Corresponding Aerodrome Flight Rule Restrictions may be created for example to prevent a VFR landing during IFR-only operations.

DNM	EUROCONTROL
Document Title: NM 23.0.0 - NOP/B2B Release Notes - NM 23.0.0	Document Reference: B2B/23.0.0/ReleaseNotes_NM_23_0

(2) The objective of the change is:

- To provide an unambiguous definition of the times represented by SR/SS at each airport that makes use of such events.

1.1.2.2.2. Change

- (1) A new `SunriseSunsetTable` feature was introduced as part of the ADR Extensions to provide the definition of SR/SS times for the associated `AirportHeliport` feature.
- (2) The `SunriseSunsetTable` feature contains a list of `SunriseSunsetRow` objects, each providing the SR/SS times pair for a particular day.
- (3) Like any AIXM 5.1 feature, the `SunriseSunsetTable` feature is identified by a `gml:identifier`.

For technical reasons (due to the fact that the feature does not exist as such in CACD but it is artificially created) the `gml:identifier` is not a UUID but uses the code space `urn:x-nmb2b:` (like for all other "artificial" features).

The value of the identifier is the UUID of the aerodrome prefixed with the string `SunriseSunsetTable`.

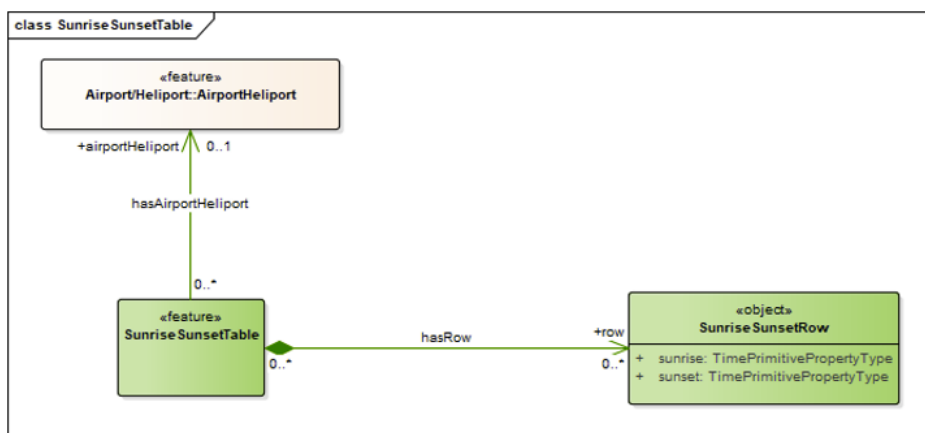


Figure 1.1. *SunriseSunsetTable* feature extension:

Note

In the AIXM 5.1 export the `SunriseSunsetTable` feature always contains two time slices, each representing an AIRAC cycle. In other words, each exported feature contains the SR/SS times for 56 days.

1.1.2.3. More Navaid types.

1.1.2.3.1. Context

- (1) This change is completely transparent to the B2B users as it is about data content. It is mentioned in these release notes for transparency. The change is twofold:

DNM		EUROCONTROL
Document Title:	Document Reference:	
NM 23.0.0 - NOP/B2B Release Notes - NM 23.0		B2B/23.0.0/ReleaseNotes_NM_23_0

- a) In case of collocated Navaid instruments (e.g. VOR and DME) the distance and bearing for a significant point relative to the Navaid are calculated from the same geographical location, even if the two instruments are physically apart.
- b) In the scope of model alignment between CACD, EAD and AIXM some Navaid types should be updated to reflect the correct instrument type.

1.1.2.3.2. Change

- (1) For a reference point (RFP) the distance will be measured from the precise DME location whilst the radial measurement will be taken from the precise VOR location.
- (2) The following Navaid types may now be used by NM:
 - a) DF
Direction Finder
 - b) MLS_DME
Microwave Landing System
 - c) SDF
Simplified Directional Facility
 - d) TLS
Transponder Landing System
 - e) OTHER
Other types of navaid services

(3) Backward compatibility

The publication of additional Navaid types will be done in all B2B versions.

This change is backward compatible because it complies with the AIXM 5.1 XSD.

1.1.2.3.3. Examples:

- [Navaid_EBX with new NAV type SDF>](#)
- [Navaid_EAG with new NAV type DF>](#)

1.1.3. Fixes and Corrections

- (1) NONE.

1.1.4. Known Issues, Limitations and Restrictions

- (1) NONE.

DNM		EUROCONTROL
Document Title:	NM 23.0.0 - NOP/B2B Release Notes - NM 23.0	Document Reference: B2B/23.0.0/ReleaseNotes_NM_23_0

1.2. FlightServices

1.2.1. Overview

- (1) This document describes the changes introduced in NM 23.0 to the B2B Flight service group.

1.2.2. Enhancements & New Features

1.2.2.1. Early provision of AIRAC data for Flight Filing evaluation.

1.2.2.1.1. Context

- (1) Today, airspace users may start evaluating the impact of a new AIRAC data on their flight plans only 5 days before the AIRAC switch (via the FlightPlanValidation service). The new AIRAC data is made available via B2B at the same time.
- (2) This 5-day time window is very short and in some cases it is not sufficient for an airspace user to prepare for the upcoming airspace changes.
- (3) It has been requested to extend this FPL validation to about 15 days before the AIRAC switch to give the airspace users more time to evaluate the impact on flight plan filing.
- (4) Furthermore, it is sometimes desirable to perform FPL validation against AIRACs defined far in the future (OPS EXERCISE AIRAC).

1.2.2.1.2. Change

- (1) In release 23.0 flight plan validation via B2B was extended as follows:
- Flight plan validation for the next AIRAC cycle available approximately 15 days before the AIRAC switch (via a new environment ENVPREVAL . NEXT).
 - Flight plan validation for a future AIRAC (that NM has agreed to provide) available N days before AIRAC becomes effective (via a new environment ENVPREVAL . ADHOC).
- (2) The ENVPREVAL . NEXT and ENVPREVAL . ADHOC environments can be accessed via dedicated url's:
- Url to access ENVPREVAL . NEXT: https://www.b2b.nm.eurocontrol.int/B2B_EP1/gateway/spec/X.Y.Z/
 - Url to access ENVPREVAL . ADHOC: https://www.b2b.nm.eurocontrol.int/B2B_EP3/gateway/spec/X.Y.Z/

(3) **Note**

- Please note that the airspace data available 15 days before AIRAC switch is still subject to minor changes/corrections until final publication.

DNM		EUROCONTROL
Document Title:	Document Reference:	
NM 23.0.0 - NOP/B2B Release Notes - NM 23.0		B2B/23.0.0/ReleaseNotes_NM_23_0

- The access to the NM Validation / Pre-validation systems depends on the availability of both systems.
- Only requests related to the download of AIXMDatasets, Flight Plan Validation and Route Generation are allowed on the two pre-validation environments.
- Authentication requires the OPS client certificate.

1.2.2.2. Trajectory information in FIXM 4.1.

1.2.2.2.1. Context

- (1) NM currently supports several forms of trajectory information exchange in a flight plan (other than the route in ICAO Item 15):
 - a) The Item 18 (RMK/ field);
 - b) The NM B2B Basic Trajectory, which mirrors the RMK/ field;
 - c) The Extended Flight Plan (EFPL), that builds on top of the Basic Trajectory exchange.
- (2) NM intends to move to a single form of trajectory exchange.
- (3) This single form of trajectory exchange implies removing specialities from the extended services to the regular filing/validation services.
- (4) FIXM aims to be the global standard (PANS ATM) for flight plan exchange supporting FF-ICE.
- (5) FF-ICE/1 enhances the flight plan data exchanges facilitating a CDM process between AOs/CFSPs, the Network Manager and ANSPs in the pre-departure phase of the flight.
- (6) The aim is to improve the consistency and the accuracy of 4D flight trajectories maintained by the different stakeholders.
- (7) The changes are built on the existing NM systems functionality and are driven by the latest ICAO flight plan provisions (FF-ICE flight plan) and the associated latest flight information exchange format version (FIXM v4.1.0) in order to provide filing of FF-ICE flight plans in FIXM format.

1.2.2.2.2. Change

1.2.2.2.2.1. Deprecated B2B service requests.

- (1) The following B2B service requests available in the `flight.FlightFiling` service have been removed in the 23.0 B2B interface (in favour of FIXM):
 - a) `fileNewExtendedFlightPlan()`
 - b) `fileExtendedFlightPlanUpdate()`

DNM		EUROCONTROL
Document Title:	NM 23.0.0 - NOP/B2B Release Notes - NM 23.0	Document Reference: B2B/23.0.0/ReleaseNotes_NM_23_0

1.2.2.2.2.2. Deprecated classes.

(1) The following classes have been removed in 23.0 in the `flight.FlightFiling` service:

- a) `ExtendedFlightPlanValidationRequest`
- b) `ExtendedFlightPlanValidationReply`
- c) `ExtendedFlightPlanCreationRequest`
- d) `ExtendedFlightPlanCreationReply`
- e) `ExtendedFlightPlanUpdateRequest`
- f) `ExtendedFlightPlanUpdateReply`
- g) `ExtendedFlightPlan`
- h) `ExtendedFlightPlanUpdate`

1.2.2.2.2.3. Modified classes.

(1) The following classes have been modified in the `eurocontrol.cfm.cua.b2b.flight` package:

a) `FlightPlanValidationReply`

- Nature of the changes: • Association with the modified [FIXMFlight](#) class.
- Impacted service requests: • `FlightPreparation.validateFlightPlan()`

b) `FlightPlanInput`

- Nature of the changes: • Association with the modified [FIXMFlight](#) class.
- Association with the modified [StructuredFlightPlan](#) class.
- Impacted service requests: • `FlightPreparation.validateFlightPlan()`
- `FlightPreparation.proposeRoutes()`
- `FlightFiling.fileNewFlightPlan()`

c) `FlightPlanUpdateInput`

- Nature of the changes: • Association with the modified [FIXMFlight](#) class.
- Association with the modified [StructuredFlightPlanUpdate](#) class.

DNM		EUROCONTROL
Document Title:	NM 23.0.0 - NOP/B2B Release Notes - NM 23.0	Document Reference: B2B/23.0.0/ReleaseNotes_NM_23_0

- Impacted service requests:
- `FlightFiling.fileFlightPlanUpdate()`
- d) `FlightPlanOutput`
- Nature of the changes:
- Association with the modified [FIXMFlight](#) class.
 - Association with the modified [StructuredFlightPlan](#) class.
- Impacted service requests:
- `FlightFiling.fileNewFlightPlan()`
 - `FlightFiling.fileFlightPlanUpdate()`
 - `FlightManagement.retrieveFlight()`
- e) `FlightPlanMessage`
- Nature of the changes:
- Association with the modified [FlightPlanData](#) class.
- Impacted P/S topics:
- `Subscription.FLIGHT_PLANS`
- f) `FlightPlanData`
- Nature of the changes:
- Association with the modified [FIXMFlight](#) class.
- Impacted classes:
- [FlightPlanMessage](#).
- g) `StructuredFlightPlan`
- The diagram below shows which basic trajectory elements are deprecated (removed) and which are conserved in NM 23.0.
 - The attribute `takeOffWeight` (TOW) of the class `BasicTrajectoryData` and the attribute `taxiTime` (TAXI) of the class `DepartureData` are kept in the NM 23.0 as the remaining elements of the basic trajectory exchange.

DNM	EUROCONTROL
Document Title: NM 23.0.0 - NOP/B2B Release Notes - NM 23.0.0	Document Reference: B2B/23.0.0/ReleaseNotes_NM_23_0

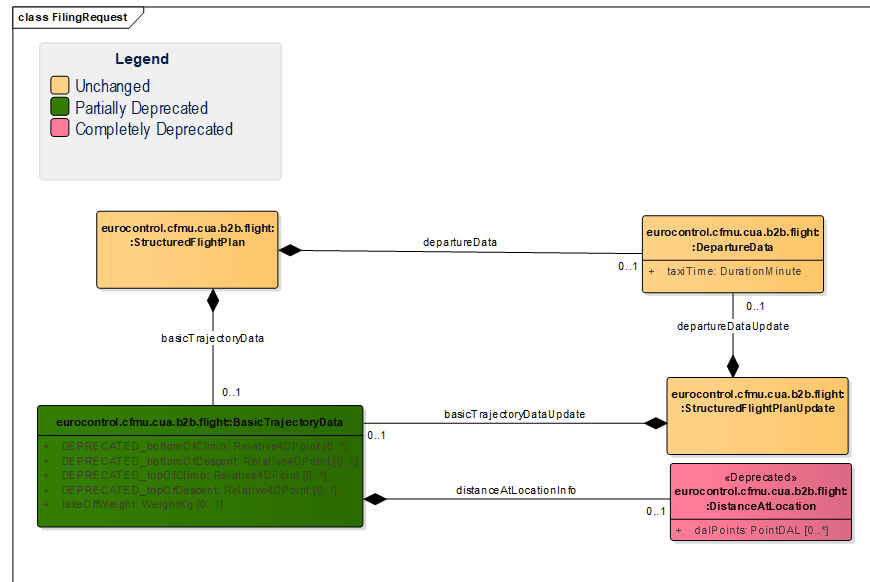


Figure 1.2. Changes of *BasicTrajectoryData* class.

Nature of the changes:

- Association with the modified [BasicTrajectoryData](#) class.

Impacted classes:

- [FlightPlanInput](#).
- [FlightPlanOutput](#).

h) StructuredFlightPlanUpdate

i) Same remarks as for the class [StructuredFlightPlan](#).

Nature of the changes:

- AAssociation with the modified [BasicTrajectoryData](#) class.

Impacted classes:

- [FlightPlanUpdateInput](#).

i) BasicTrajectoryData

Nature of the changes:

- The following attributes are deprecated (removed):
 - bottomOfClimb
 - bottomOfDescent
 - topOfClimb
 - topOfDescent

DNM		EUROCONTROL
Document Title:		Document Reference:
NM 23.0.0 - NOP/B2B Release Notes - NM 23.0		B2B/23.0.0/ReleaseNotes_NM_23_0

- The association `distanceAtLocationInfo` is deprecated (removed).
- Impacted classes:
- [StructuredFlightPlan](#).
 - [StructuredFlightPlanUpdate](#).
- j) `FIXMFlight`
- Unlike the previous release, `FIXMFlight` trajectory components needs to be used as per the updated service requirements:
- Filed - accept a `FIXM` trajectory from an AO
 - Reply - exchange with the negotiating/agreed trajectory
 - Reply - Exchange with constraints
 - Filed/Reply - Exchange a structured route
- Nature of the changes:
- i) `FIXM` Trajectory
- The `FIXM` structure tells us when a traditional FPL is sent, and when an FPL is sent with trajectory information.
 - It is expected that when there is no trajectory, that the attribute `FlightRouteInformation.routeText` of the class `RouteTrajectory.FlightRouteInformation` is populated with an Item 15 c as a traditional FPL.
 - If the `FlightRouteInformation.routeText` is empty, we would expect the structured route with the `FIXM` trajectory to contain all the information that was conveyed with the free text route field (unstructured `FlightRouteInformation.routeText`).
 - So when a trajectory is provided `FlightRouteInformation.routeText` must be empty but `FlightRouteInformation.cruisingLevel` or `FlightRouteInformation.cruisingSpeed` must be populated,
 - It is expected that the “element” is empty when the `routeText` is empty.
The rationale for this choice is to allow either `RouteTrajectory.takeOffWeight` or the performance profiles to be supplied when

DNM		EUROCONTROL
Document Title: NM 23.0.0 - NOP/B2B Release Notes - NM 23.0.0		Document Reference: B2B/23.0.0/ReleaseNotes_NM_23_0

a `FlightRouteInformation.routeText` is supplied.

- This is enforced with B2B validation.

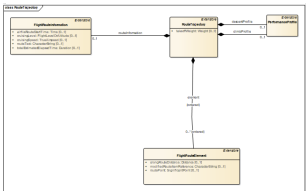


Figure 1.3.RouteTrajectory class.

ii) FIXM Trajectory Point Role

- The trajectory properties `BOTTOM_OF_CLIMB` (BOC) and `BOTTOM_OF_DESCENT` (BOD) of the class `TrajectoryPointPropertyType` have been removed in FIXM 4.1.0.

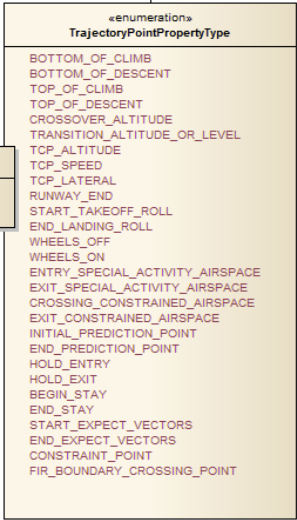


Figure 1.4.TrajectoryPointPropertyType - FIXM 4.0.1.

DNM		EUROCONTROL
Document Title: NM 23.0.0 - NOP/B2B Release Notes - NM 23.0		Document Reference: B2B/23.0.0/ReleaseNotes_NM_23_0

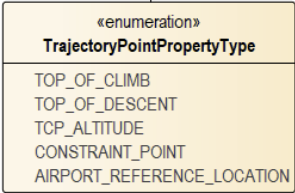


Figure 1.5.TrajectoryPointPropertyType
- FIXM 4.1.0.

- iii) Constraints
- Constraints may be returned or provided via retrieval of the class `fixm.FIXMFlight` using `flight.FlightPreparation` or `flight.FlightFiling` services, or via the P/S service.
- iv) FIXM Trajectory Role Name
- NM is attempting to introduce the trajectory negotiation.
 - Only filed flight plan should ever be received from the AOs.
Either for the `flight.FlightPreparation` or the `flight.FlightFiling` services.

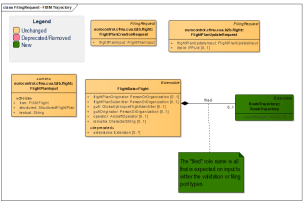


Figure 1.6.FIXM Trajectory Role Name.

- A trajectory returned by the `flight.FlightFiling` service is always "agreed".

Impacted classes:

- [FlightPlanInput.](#)
- [FlightPlanOutput.](#)
- [FlightPlanData.](#)
- [FlightPlanUpdateInput.](#)

DNM	EUROCONTROL
Document Title: NM 23.0.0 - NOP/B2B Release Notes - NM 23.0	Document Reference: B2B/23.0.0/ReleaseNotes_NM_23_0

- [FlightPlanValidationReply](#).

k)

1.2.2.2.2.4. Validation Rules Changes.

- (1) The following validation rules has been enforced for the FIXM trajectories:
 - a) FIRST_POINT_MUST_HAVE_A_CUMULATIVE_DISTANCE
 - b) ONE_AND_EXACTLY_ONE_ADEP - must have the role AERODROME_REFERENCE_LOCATION, must be first, and must be 4 ALPHA CHARACTERS.
 - c) ONE_AND_EXACTLY_ONE_ADES - must have the role AERODROME_REFERENCE_LOCATION, must be last, and must be 4 ALPHA CHARACTERS.
 - d) REFPOINT_OTHERPOINT_NOT_SUPPORTED -
- (2) New validation rules:
 - a) Enforce empty `FlightRouteInformation.routeText` when `FlightRouteInformation.routeText` in the trajectory, a `FlightRouteElement` is supplied. Output validation rules differ from input validation rules.
 - b) Enforce population of `FlightRouteInformation.cruisingLevel` and `FlightRouteInformation.cruisingSpeed` when a trajectory is present.
 - c) No NM `BasicTrajectoryData` is to be supplied with FIXM: `:RouteTrajectory`.
 - d) Enforce only two concrete implementations of `AbstractRouteChange`, one of which must be a `SpeedChange`, and the other must be a `LevelChange` this is true for single elements of the `FlightRouteElement` list.
 - e) `Point4DTimeChoice` shall have either (and not both) type of time:
 - `absoluteTime`
 - `relativeTimeInitialPredictionPoint`
- (3) Authorisation:
 - a) Access control to the FIXM Trajectory will be done via the business authorisation rule called `FIXMTrajectory`.
For more details see [NOP/B2B Reference Manuals - Essentials](#)

DNM		EUROCONTROL
Document Title:	NM 23.0.0 - NOP/B2B Release Notes - NM 23.0	Document Reference: B2B/23.0.0/ReleaseNotes_NM_23_0

1.2.2.3. C -DPI with reason UNDO_ADPI.

1.2.2.3.1. Context

- (1) Some airports input the actual off-block event (AOBT) of a flight manually. This manual input is error prone (may result in activating the wrong flight).
- (2) This results in a time consuming phone call interaction with NMOC. in some cases.

1.2.2.3.2. Change

- (1) TWRs at CDM airports or Advanced ATC TWR airports will have the option to provide a C-DPI (Cancel DPI) with reason UNDO_ADPI to request the de-activation of a flight that was erroneously activated by a wrong A-DPI.
- (2) Unlike for all other values for the C-DPI reason, the flight will not be suspended when the reason UNDO_ADPI is provided.

1.2.2.4. CTOT extension request via A-DPI (Tower Update A-DPI).

1.2.2.4.1. Context

- (1) The A-DPI (ATC DPI) is a message from A-CDM airports informing NM of actual off-block time + (accurately) estimated take-off time (TTOT field).
- (2) For a regulated flight, A-DPI is accepted only if the TTOT is inside the slot tolerance window (STW).
- (3) The tower doesn't allow the aircraft to take-off if the TTOT is outside the STW.
- (4) Even with best planning, last minute situations may lead to an aircraft having departed from the block not being able to take-off in the STW.
- (5) Under such circumstances, coordination between tower and NMOC is necessary to arrange a CTOT extension. This is mainly achieved by phone.
- (6) This coordination is time consuming, and the more the time passes, the less chances the CTOT extension will be granted.
In case the CTOT extension cannot be granted, the current NM recommendation "*return to stand and update TOBT/EOBT*" is not always feasible.
In this case, the airport prefers a CTOT recalculation.

1.2.2.4.2. Change

- (1) The A-DPI request has been enriched with a new attribute `depstatusTwrUpdate`, that can be set by the Tower in one of the following cases:
 - a) Request a 10 min CTOT extension

DNM		EUROCONTROL
Document Title: NM 23.0.0 - NOP/B2B Release Notes - NM 23.0		Document Reference: B2B/23.0.0/ReleaseNotes_NM_23_0

The CTOT extension will be granted only if a number of conditions are met. If the CTOT extension cannot be granted, either the message will be rejected or a network impact assessment will be performed, resulting in e.g. a new CTOT.

- b) Request a new CTOT
When the TWR controller estimates that the flight will not be able to depart inside its STW, even if a CTOT extension would be granted, he/she will have the option to provide a Tower Update A-DPI. This will be processed exactly the same as a T-DPI-s message with a TTOT later than the STW, i.e. a network impact assessment will be performed, resulting in e.g. a new CTOT.
 - c) De-suspend a flight that was suspended by the airport (via C-DPI)
A Tower Update A-DPI provided for a flight that was suspended by the airport via a C-DPI will trigger a network impact assessment and the flight will be de-suspended. Note that a classic A-DPI is rejected in this case. The Tower Update A-DPI is manually triggered by the TWR controller based on the operational status of the flight.
- (2) Only those CDM airports or Advanced ATC TWR airports that wish to make use of the Tower Update A-DPI will be impacted.
Their systems will have to be adapted in order to include in the A-DPI message an additional depstatus-field with value "TWRUPDATE" and be ready to process the response from NM systems.
 - (3) Advanced ATC TWR airports are advised to implement the Tower Update A-DPI for de-suspending a flight (use case 3 in the above section) Otherwise, the only other option to de-suspend a flight is through a new EOBT from a DLA/CHG message.
For A-CDM airports, it is recommended to first send a T-DPI-t or a T-DPI-s to de-suspend the flight, triggered by e.g. an updated TOBT.
 - (4) The CDM airport or Advanced ATC TWR airport needs to establish procedures for the TWR that describe:
 - a) The situations when a Tower Update A-DPI message can be triggered (manually).
 - b) The required action that needs to be taken depending on the reply from NM to the Tower Update A-DPI request
 - (5) The intention to provide to NM the Tower Update A-DPI message shall be communicated to the NM A-CDM Team and the details shall be recorded in the DPI ICD before it is implemented.

1.2.2.5. Removal of T-DPI_p message.

1.2.2.5.1. Context

- (1) The T-DPI_p message (Provisional Target DPI) was intended to provide a what-if view of the CASA computation base on provisional info.
- (2) The T-DPI_p was only available via AFTN and never implemented in B2B. Only its result (CDMProvisionalInfo) was available via B2B as a flight field.
- (3) The T-DPI_p was never used.

DNM		EUROCONTROL
Document Title:	Document Reference:	
NM 23.0.0 - NOP/B2B Release Notes - NM 23.0		B2B/23.0.0/ReleaseNotes_NM_23_0

1.2.2.5.2. Change

- (1) The T-DPI_p has been suppressed.
- (2) The CDMProvisionalInfo type has been removed from B2B.

1.2.2.6. Deicing status in DPI requests.

1.2.2.6.1. Context

- (1) The UpdatedDPIRequest base class of DPI requests contained a DeicingStatus enumerator (with three possible values).

1.2.2.6.2. Change

- (1) The original attribute deicing has been renamed to depstatusDeicing to align it with the AFTN equivalent.
- (2) Its type has been changed from the enumeration DeicingStatus to a Boolean.
- (3) The following enumeration class has been removed in 23.0 from the flight.FlightManagement service:
 - a) DeicingStatus

1.2.2.7. Enhance NM B2B Read services in support of efficient client use of NM B2B API Write Service.

1.2.2.7.1. Context

- (1) Client systems need some high level data like minimum/maximum acceptable TTA that they can only compute by using various B2B services and complex formulas, while the information is available internally in NM.

1.2.2.7.2. Change

- (1) The ArrivalInformation type has been extended to include the following:
 - a) The minimum/maximum calculated time over the coordination fix NM can provide. [attributes minCalculatedTimeOver and maxCalculatedTimeOver]
 - b) The STAR currently selected by NM. [attribute nmArrivalProcedure]
 - c) As a consequence of the above, the current attribute arrivalProcedure that contained the last STAR communicated to NM via API has been renamed to apiArrivalProcedure to clearly distinguish it from the nmArrivalProcedure.
 - d) The Estimated Time Over the metering fix (to initialize the arrival sequence). [attribute estimatedOrActualTimeOver]

DNM		EUROCONTROL
Document Title:	NM 23.0.0 - NOP/B2B Release Notes - NM 23.0	Document Reference: B2B/23.0.0/ReleaseNotes_NM_23_0

1.2.3. Fixes and Corrections

1.2.3.1. Cannot update flight plan when ADEP/ADES/ALTN is ZZZZ

1.2.3.1.1. Context

- (1) When a flight is planned to depart from or arrive to a non-ICAO aerodrome or has a non-ICAO alternate destination aerodrome, any update to the flight plan must re-state the non-ICAO departure or arrival aerodrome (or alternate) or will otherwise be rejected. This is a rule in the IFPS system. The current B2B API does not allow the provision of the departure or arrival aerodrome in the `FlightPlanUpdateRequest`. This makes it impossible to update such flight plans via B2B versions until 22.5 included.

1.2.3.1.2. Change

- (1) The `FlightPlanUpdate` type, that is used in the `FlightPlanUpdateRequest` has been modified to allow the provision of departure and arrival aerodromes to support the use case described above. The changes are:
- a) Addition of new attribute `aerodromeOfDeparture`
 - b) Addition of new attribute `aerodromesOfDestination` which now includes both the destination aerodrome and the alternates.
 - c) Suppression of the attributes `alternate1Aerodrome` and `alternate2Aerodrome` that have now been included in the complex attribute `aerodromesOfDestination`.

Note

Please note that this correction has only been implemented in 23.0. The behaviour of previous B2B versions remains untouched, which means in earlier versions than 23.0 it is not possible to update a flight plan that departs from or arrives to a non-ICAO aerodrome (or has non-ICAO alternates).

1.2.3.2. B2B service request `TargetTimeOverAPIRequest` is systematically rejected.

1.2.3.2.1. Context

- (1) The B2B service request `TargetTimeOverAPIRequest` is systematically rejected with message `T00_EARLY, MESSAGE RECEIVED TOO EARLY`

1.2.3.2.2. Change

- (1) The flight was regulated but `earliestSubmissionTimeTargetTimeOverAPI` was computed based on EOBT, while it should be computed based on COBT.

1.2.3.2.3. Scenario - Update the TTO API.

- (1) Setup:
- a) Flight - *DLH5AE1-EDDF-EBBR-16:25*

DNM		EUROCONTROL
Document Title: NM 23.0.0 - NOP/B2B Release Notes - NM 23.0.0		Document Reference: B2B/23.0.0/ReleaseNotes_NM_23_0

b) Regulation - *EBBRA28M-EBBUFMP-EBBR/MB-281200-282000*

c)



Figure 1.7. Flight DLH5AE1-EDDF-EBBR-16:25

(2) Steps:

TIMESTAMP	ACTION	LINKS	COMMENTS
2019-02-28 08:00	File new flight plan AIR-CRAFT_ID=DLH5AE1 ADEP=EDDF ADES=EBBR EO-BT=2019-02-28 16:25 SEND-ING_TIME=2019-02-28 08:00	B2B Request - New flight plan DLH5AE1 B2B Reply - New flight plan DLH5AE1	
2019-02-28 08:01	Retrieve Flight DLH5AE1	B2B Request - retrieveFlight() DLH5AE1 B2B Reply - retrieveFlight() DLH5AE1	ETOT 16:40 CTOT 16:45 ETA 17:17 CTA 17:22 TTO API submission window [15:50 .. 16:20]
2019-02-28 15:40	Submit TTO API before allowed time	B2B Request - submitTarget-TimeOverAPI() DLH5AE1 B2B Reply - submitTarget-TimeOverAPI() DLH5AE1	MESSAGE RECEIVED TOO EARLY

DNM		EUROCONTROL
Document Title: NM 23.0.0 - NOP/B2B Release Notes - NM 23.0		Document Reference: B2B/23.0.0/ReleaseNotes_NM_23_0

TIMESTAMP	ACTION	LINKS	COMMENTS
2019-02-28 16:00	Submit TTO API when allowed but with an unrealistic time over LNO	B2B Request - submitTarget-TimeOverAPI() DLH5AE1 B2B Reply - submitTarget-TimeOverAPI() DLH5AE1	UNREALISTIC TTO
2019-02-28 16:02	Submit TTO API allowed and with good time over LNO	B2B Request - submitTarget-TimeOverAPI() DLH5AE1 B2B Reply - submitTarget-TimeOverAPI() DLH5AE1	OK
2019-02-28 16:02	Retrieve Flight DLH5AE1	B2B Request - retrieveFlight() DLH5AE1 B2B Reply - retrieveFlight() DLH5AE1	ETOT 16:40 ETOT 16:45 ATOT 16:45 ETA 17:17 CTA 17:22 ATA 17:18 TTO on point LNO 17:07 ETO or ATO on point LNO 17:07 TTO API submission window [15:50 .. 16:20]

Table 1.1. Scenario steps

1.2.4. Known Issues, Limitations and Restrictions

- (1) NONE.

1.3. FlowServices

1.3.1. Overview

- (1) This document describes the changes introduced in NM 23.0 to the B2B Flow service group.

DNM		EUROCONTROL
Document Title:	NM 23.0.0 - NOP/B2B Release Notes - NM 23.0	Document Reference: B2B/23.0.0/ReleaseNotes_NM_23_0

1.3.2. Enhancements & New Features

1.3.2.1. New B2B service - flight exclusion & force CTOT.

1.3.2.1.1. Context

- (1) In July-August 2018 about 4000 flights were subject to forced CTOT or exclusion from regulation by means of manual interactions with NMOC over the telephone.
- (2) The E-helpdesk application allows requesting exclusion from regulations or CTOT improvement. The E-helpdesk is not yet available via B2B.
- (3) B2B interfaces exist to force CTOT or to remove flights from a measure (cherry picked regulation context).
This allows NMOC to review and evaluate Network Impact Assessment (using proposal flights).
- (4) Measure Collaborative Decision Making (M-CDM) can be done on measure or flights (accept/reject/acknowledge/interrupted).
- (5) PJ-24 (CTM) aims to integrate flight exclusion into local tools (B2B) for next summer season.
- (6) There is a strong need for automating the process of excluding a flight from a regulation by an FMP, while allowing NM to evaluate the network impact and accept/reject the proposal. Both FMP and NMOC need to be able to see the status of the proposal flights (acknowledged, accepted, rejected, interrupted).

1.3.2.1.2. Change

1.3.2.1.2.1. Deprecated B2B service requests.

- (1) The following B2B service requests available in the `flow.Measures` service become deprecated (hence removed in 23.0):

- a) `addFlightsToMeasure()`
- b) `removeFlightsFromMeasure()`

1.3.2.1.2.2. New B2B service request.

- (1) The following B2B service request has been added in the `flow.Measures` service:
 - a) `updateFlightsInMeasure()` - replaces the above deprecated B2B services requests

1.3.2.1.2.3. Deprecated classes.

- (1) The following classes have been deprecated in the `flow.Measures` service:
 - a) `RemoveFlightsFromMeasureRequest`
 - b) `RemoveFlightsFromMeasureReply`

DNM		EUROCONTROL
Document Title: NM 23.0.0 - NOP/B2B Release Notes - NM 23.0		Document Reference: B2B/23.0.0/ReleaseNotes_NM_23_0

- c) `FlightInMeasure`
- d) `FlightInRegulation`
- e) `FlightInRerouting`
- f) `FlightInMCDMOnly`

1.3.2.1.2.4. New classes.

(1) The following classes have been added in the `flow.Measures` service:

- a) `UpdateFlightsInMeasureRequest`
- b) `UpdateFlightsInMeasureReply`
- c) `FlightInMeasureUpdateChoice`
Choice summary:
 - i) `addFlightToRerouting` - add a flight to a cherry picked rerouting.
 - ii) `removeFlightFromRerouting` - remove a flight from a rerouting.
 - iii) `addFlightToMCDMOnlyMeasure` - add a flight to the `MCDM_only` measure with this measure identifier.
 - iv) `removeFlightFromMCDMOnlyMeasure` - remove a flight from the `MCDM_only` measure with this measure identifier.
 - v) `forceFlightInRegulation` - force a flight in a regulation or add a flight to a cherry picked regulation (by forcing).
 - vi) `unforceFlightInRegulation` - unforce a forced flight in a regulation or remove a flight from a cherry picked regulation (by unforcing it will become exempted again).
 - vii) `excludeFlightFromRegulation` - exclude a flight from 1 or more regulations.
 - viii) `reIncludeFlightInRegulation` - re-include a flight in one or more regulations from which the flight is excluded.
 - ix) `removeProposalFlight` - Allows to remove/undo a proposal created by `forceFlightInRegulation` or `unforceFlightInRegulation` or `excludeFlightFromRegulation` or `reIncludeFlightInRegulation` or `reIncludeFlightInRegulation`.
Note that `removeFlightFromRerouting` needs to be used to remove a proposal created by `addFlightToRerouting`.
- d) `ExcludeReIncludeFlightInRegulation` - allows to exclude or re-include a flight in 1 or more regulations

DNM	EUROCONTROL
Document Title: NM 23.0.0 - NOP/B2B Release Notes - NM 23.0	Document Reference: B2B/23.0.0/ReleaseNotes_NM_23_0

- e) `ForceFlightInRegulation` - force a flight in a regulation or add a flight to a cherry picked regulation (by forcing)

1.3.2.1.2.5. New attributes.

- (1) The following attribute has been added to the class `flight.Flight`:

- a) `excludedRegulations` - all the regulations from which the flight has been excluded

Note

The attribute `excludedRegulations` is considered a heavy flight field when retrieved.

1.3.2.1.2.6. Note:

- (1) **Warning**

The full service (adding/removing flights to rerouting, etc.) is trial related (STAM): it is only accessible (authorized) during specific trials or on specific test platforms. Its use will be restricted to invited users.

1.3.2.2. Improved Cherry pick feature.

1.3.2.2.1. Context

- (1) When the DCB/FMP detects an imbalance, a ground delay measure is decided upon. FMP communicates the rate, the duration and traffic volume for the measure. NM creates and applies the measure (network cherry-pick measure). DCB tool fills the network cherry pick measure using the appropriate B2B service requests.
- (2) Currently CASA searches for a slot in the cherry pick regulation so the rate of the cherry-pick must be much larger than the actual one (at least x2) to accomodate the TTA and therefore avoid artificial delays (aka bunching).
The `RegulationProposalFilingRequest` B2B Flow service doesn't allow the user to specify the rate (because it hard-coded to 60 slots/hour, which in some cases is too low). Regulation rate and capacity monitoring values are not the same. The DCB tool must look at the capacity monitoring value instead of the regulation rate which is confusing.

1.3.2.2.2. Change

- (1) DCB FMP will provide the regulation rate and update capacity fields via NM B2B webservices `RegulationProposal[Filing/Update]Request`.
The `RegulationProposal[Filing/Update]Request` now allows specifying these fields also for cherry pick measure proposals.
The specified rate must match the real capacity (no longer need for doubling the rate), as casa will no longer search for an available slot in a cherry picked regulation (hence not causing artificial delays).

DNM		EUROCONTROL
Document Title:		Document Reference:
NM 23.0.0 - NOP/B2B Release Notes - NM 23.0		B2B/23.0.0/ReleaseNotes_NM_23_0

1.3.2.3. Rerouting evolution.

1.3.2.3.1. Context

- (1) Today, the B2B user can not combine horizontal and vertical rerouting together. Nor can the B2B user do a vertical rerouting that modifies (slightly) the 2D projection of the route. In some cases, a DCT route in upper flight level is NOK (restriction related) in the lower sectors.
- (2) The goal of this change is to align rerouting options/features in scenario repository with NOP rerouting and CHMI rerouting functionalities.

1.3.2.3.2. Change

1.3.2.3.2.1. Modified classes.

- (1) The following classes have been modified in the `flow.Measures` service:

a) Rerouting

Nature of the changes:

- Association with the new class [ReroutingSourcesAndConstraints](#).

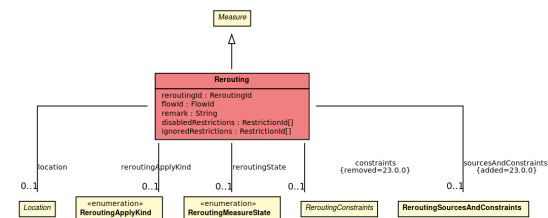


Figure 1.8. Changes of Rerouting class.

Impacted service requests:

- `retrieveReroutingsFromScenario()`
- `updateRerouting()`
- `createRerouting()`
- `cancelRerouting()`
- `queryReroutings()`

b) AvoidViaAirspaceReroutingConstraint

Nature of the changes:

- New attribute **AvoidAirspaceReroutingKind**.

1.3.2.3.2.2. Deprecated classes.

- (1) The following classes have been deprecated in the `flow.Measures` service:

DNM		EUROCONTROL
Document Title: NM 23.0.0 - NOP/B2B Release Notes - NM 23.0.0		Document Reference: B2B/23.0.0/ReleaseNotes_NM_23_0

a) ReroutingConstraints

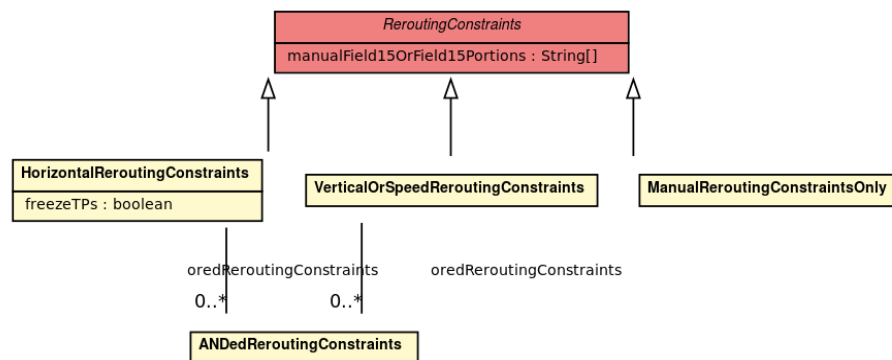


Figure 1.9. Changes of ReroutingConstraints class.

b) VerticalOrSpeedReroutingConstraints

1.3.2.3.2.3. New classes.

(1) The following classes have been added in the flow.Measures service:

a) ReroutingSourcesAndConstraints - rename of the class ReroutingConstraints

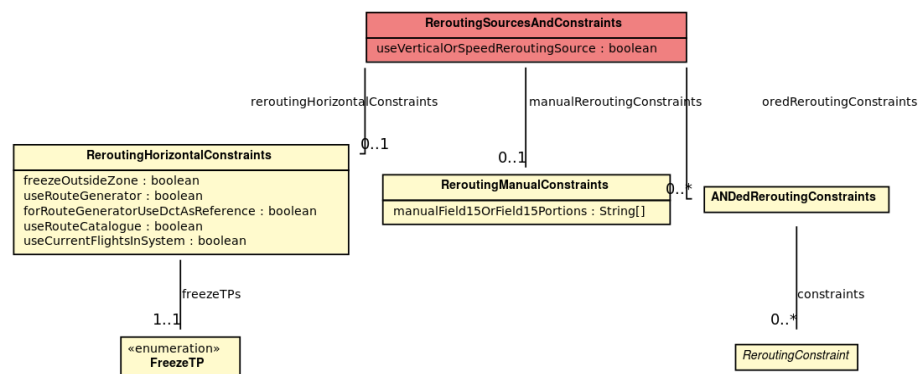


Figure 1.10. Changes of ReroutingSourcesAndConstraints class.

b) ReroutingHorizontalConstraints

c) ReroutingManualConstraints

d) AvoidAirspaceReroutingKind - new enumeration class

e) FreezeTPs - new enumeration class

DNM		EUROCONTROL
Document Title:	NM 23.0.0 - NOP/B2B Release Notes - NM 23.0	Document Reference: B2B/23.0.0/ReleaseNotes_NM_23_0

1.3.2.3.3. Mapping between attribute's value of old B2B versions and the new B2B version.

- (1) When input by the user, older version of horizontal rerouting constraints:
 - freezeTPs
 - a) True for freezeOutsideZone = True and FreezeTP = FreezeSidStar
 - b) False for FreezeTP = 'No' and freezeOutsideZone = False
 - useRouteGenerator = True
 - forRouteGeneratorUseDctAsReference = False
 - useRouteCatalogue = True
 - AvoidAirspaceReroutingKind not present
- (2) When returned by NM, older version of horizontal rerouting constraints:
 - freezeTPs
 - a) True when FreezeTP is not 'No' and freezeOutsideZone = False
 - b) False otherwise
 - Ignore AvoidAirspaceReroutingKind
 - If horizontal and vertical source are both present, then the rerouting is returned as vertical to the user

1.3.3. Fixes and Corrections

- (1) NONE.

1.3.4. Known Issues, Limitations and Restrictions

- (1) NONE.

1.4. PublishSubscribeServices

1.4.1. Overview

- (1) This document describes the changes introduced in NM 23.0 to the B2B Publish/Subscribe service group.

DNM		EUROCONTROL
Document Title: NM 23.0.0 - NOP/B2B Release Notes - NM 23.0		Document Reference: B2B/23.0.0/ReleaseNotes_NM_23_0

1.4.2. Enhancements & New Features

1.4.2.1. New fields in Pub/Sub flight data.

1.4.2.1.1. Change

- (1) In release 23.0 the following flight fields have been added to the Pub/Sub `FlightDataMessage`:
- `excludedRegulations`
 - `exemptedFromRegulations`
 - `lateFiler`
 - `lateUpdater`

1.4.3. Fixes and Corrections

1.4.3.1. B2B User unable to connect to AMQP OPS.

1.4.3.1.1. Context

- (1) The NM message broker is configured with a global limit on the number of connections. This is required to protect the broker.
- (2) Recently it happened that one client application erroneously created hundreds of connections causing the global connection limit to be reached.
- (3) This in turn caused the broker to reject genuine connection attempts from other client applications (because there were no more connections available).

1.4.3.1.2. Change

- (1) In order to avoid that one client negatively impacts other clients, a new limit on the number of connections from the same IP address has been put in place.
- (2) The maximum allowed connections per IP address is currently set to 10.

1.4.4. Known Issues, Limitations and Restrictions

- (1) NONE.

DNM		EUROCONTROL
Document Title: NM 23.0.0 - NOP/B2B Release Notes - NM 23.0		Document Reference: B2B/23.0.0/ReleaseNotes_NM_23_0

DOCUMENT FINAL PAGE

To properly report any fault, or to propose a modification concerning the present document, please refer to:

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