DP-10

AIS-AIMSG/4-SN/6
06/05//11

AERONAUTICAL INFORMATION SERVICES-AERONAUTICAL INFORMATION MANAGEMENT STUDY GROUP (AIS-AIMSG)

FOURTH MEETING

Bordeaux, France 23 to 27 May 2011

Agenda Item 3: AIM information and data assembly, exchange, and promulgation
3.3: NOTAM/SNOWTAM/ASHTAM

AERONAUTICAL INFORMATION DISSEMINATION RELATED TO VOLCANIC ASH

(Presented by Paul Bosman)

SUMMARY

This study note reports on the development of volcanic ash NOTAM templates for Doc 8126 related to the operational impact on airspace and routes, and the statistics on global ASHTAM promulgation.

The group is invited to review the study note and provide comments to the recommendations.

1. INTRODUCTION

1.1 This study note results from the agreed action AIS-AIMSG 3/9 — *Aeronautical information dissemination related to volcanic ash*.

1.2 It provides proposed NOTAM templates for volcanic ash events in the attached document, and reports on issues raised during the template developments with regards to the current NOTAM rules.

1.3 The study note also provides statistics of the global ASHTAM promulgation from the years 2003 to 2010.

1.4 Action agreed 3/9 — Aeronautical information dissemination related to volcanic ash:

a) that the ad-hoc group consisting of Paul (Rapporteur), Steve and Greg develop, for Doc 8126, NOTAM templates (keeping in mind the work on the

digitising of NOTAM information) related to the operational impact and limited access of airspace and routes affected by the volcanic ash and submit draft proposals to the AIS-AIM SG/4;

b) that John Synnott provide the AIS-AIMSG/4 with a survey of users views on the use of ASHTAM vs NOTAM; and

c) that Paul provide the Secretariat statistics on global ASHTAM promulgation

2. NOTAM TEMPLATES DEVELOPMENT

2.1 A set of NOTAM templates have been developed for volcanic ash events, related to the operational impact on airspace and routes. The templates are provided in a separate document *NOTAM template proposal for volcanic ash events*, as an attachment to this report.

2.2 Development of the template document has involved the European AIS Stakeholders through members from the AI Operations Subgroup, the GroupEAD and the Federal Aviation Administration (FAA) of United States.

2.3 The main focus in the NOTAM templates is the structured order of the information in item E), with the purpose to create a harmonised output of the free text in the NOTAM. It will improve the readability of the message, and processing of the data by the end user. The structure of the free text follows the digital NOTAM event scenarios, as developed by the digital NOTAM Event Specification Focus Group.

2.4 NOTAM templates are included for alerting pre-eruptive volcanic activity and outbreak of volcanic eruption. These templates structure detailed information that is part of the ASHTAM format, according the digital NOTAM event specification.

2.5 Separate templates are created for navigation warnings and airspace restrictions, to encompass States choice to establish regulated airspace or not for volcanic ash events, such as danger areas for ash contaminated areas. The difference in the templates is indicated by the NOTAM code and in the structure of the free text.

2.6 Recommended NOTAM codes (Q-codes) for each operational event are provided. The codes are in accordance with current ICAO NOTAM selection criteria for navigation warnings, airspace restrictions, route - and airport closure.

3. OUTSTANDING ISSUES

3.1 During the development of the templates, issues regarding inclusion of more than one area of ash contamination area in NOTAM item E) and different ICAO formats for published coordinates in aeronautical and meteorological messages were raised.

3.2 The ash concentration areas published in the NOTAM messages are based on the forecast direction of movement of the ash at selected levels, as published by the responsible meteorological watch office and/or volcanic ash advisory watch office. The information is provided in the meteorological messages as coordinates of the areas and vertical levels. This information is supported by the ASHTAM format to be reported in item F), G) and K).

3.3 During the eruption of volcano Eyjafjallajokull in 2010, some States chose to copy the forecast ash cloud areas and vertical levels from the meteorological messages and publish all in one NOTAM, since issuance of separate NOTAM for each level was not seen practical with regard to the large amount of information.

3.4 According to the current NOTAM practice, a NOTAM shall deal only with one subject and one condition of that subject. More than one area/vertical layer of the ash cloud should be published in separate NOTAM messages.

3.5 By copying the coordinates from the meteorological messages in the NOTAM, the ICAO Annex 15 format in published coordinates does not apply. ICAO Annex 3 format for coordinates (N6744 W00852) is different from ICAO Annex 15 (6744N 00853W).

3.6 Furthermore, it was discussed if the unit "feet" should be used for description of the base/top of the ash cloud in the NOTAM, or if the unit FL (flight level) should always be used. The ASHTAM format instruction states that the base/top of the ash cloud shall be indicated as altitudes in thousands of metres (feet), and therefore this unit has been used in navigation warning NOTAM templates. However, to achieve consistency with the meteorological messages which are reporting on ash cloud base/top in flight levels, consideration should be made in using this format only also in the corresponding NOTAM.

3.7 In the draft version of the NOTAM templates, it has been decided to comply with the current Annex 15 practice, and only include one area per NOTAM, and to use the Annex 15 format of the geographical areas. This is also according to the digital NOTAM event specification. It has also been decided to include description of base/top of the ash cloud in feet in the templates However, in the discussion of considering the NOTAM to fully replace the ASHTAM as notification means for volcanic ash events, the current NOTAM format rules needs to be reconsidered. The outstanding issues should be further discussed with the aim to find consistency in format in ICAO aeronautical and meteorological messages reporting of the same information.

4. VALIDATION OF THE NOTAM TEMPLATES

4.1 The templates created for navigation warnings and airspace restrictions were included in the exercise directives for the ICAO EUR/NAT Volcanic Exercise (VOLCEX 11/01). In this exercise, 17 European States NOF participated by issuing NOTAMs, in total 304 during two days, according to a planned volcanic eruption scenario.

4.2 The effectiveness and timeliness of information dissemination to support airlines decision making will be evaluated by EUROCONTROL by June 2011, together with States NOF's feedback on the provided NOTAM templates.

4.3 It is recommended that the Study group takes part of the evaluation for discussion and further enhancement of the provided NOTAM templates, in particular regarding the current ICAO practice of not allowing more than one area and vertical layer in a NOTAM and definition of geographical borders of established temporary areas.

5. GLOBAL STATISTICS ON PROMULATION ON ASHTAM

5.1 The GroupEAD has provided statistical data derived from the European AIS Database (EAD) on the number of globally issued ASHTAM during the period of 2003-2010.

5.2 Figure 1 below presents the global issuance of ASHTAM during the period of 2003-2010. The file is also available in pdf.format

Year	LI	MD	MH	MM	NF	NT	RP	SA	SK	SL	SU	TT	WR	YB	TOTAL
2003	0	0	0	1	1	0	0	0	0	0	0	2	11	1	**16**
2004	0	0	0	0	0	0	0	0	0	0	0	3	17	1	**23**
2005	0	0	2	0	1	0	0	1	0	0	0	1	11	0	**14**

2006	0	0	0	0	10	0	0	4	1	3	1	1	167	0	**187**
2007	0	0	0	0	6	0	0	11	3	0	0	0	88	0	**115**
2008	0	0	7	0	1	0	0	388	7	0	0	0	194	0	**590**
2009	7	0	0	0	2	0	19	96	78	0	3	3	531	0	**736**
2010 (11 months)	0	5	0	0	8	1	16	25	35	1	2	2	335	0	**428**
TOTAL	**7**	**5**	**0**	**1**	**29**	**1**	**35**	**525**	**124**	**4**	**6**	**7**	**1354**	**2**	**2109**

Figure 1.Global promulgation of ASHTAM 2003-2010

(Remark: LI-Italy, MD-Dominican Republic, MH-Honduras, MM-Mexico, NF-Tonga, NT-French Polynesia, RP-the Phillipines, SA-Argentina, SK-Colombia, SL-Bolivia, SU-Uruguay, TT-Trinidad and Tobago, WR-Indonesia YB-Australia)

5.3 Also, the GroupEAD has provided a list of all processed ASHTAM in EAD during the period of February 2009 to December 2010, in total 711 messages. The list includes information on the originator, FIR concerned, time of observation and the full free text information contained in fields A) to T) for each ASHTAM. The whole list of ASHTAM messages is available in pdf-format (220 pages).

5.4 To illustrate the multiple areas/vertical layers of forecast ash clouds (ref.paragraph 3.2) in the ASHTAM message, below is a sample from the pdf.file where the information is published in item K)

A) SAVF
B) 02061557
C) CHAITEN 1508-41
D) 4250S/07239W
E) NIL
F) VA CLD OBS AT 1400Z TOP FL070
G) MOV NE EXTD 65 KM 20KT
H) 06/2000Z SFC/FL200 W44 TORES/ESQUEL, L775
I) NIL
J) VA ADVISORY CENTRE BUENOS AIRES
K) FCST ASH CLD + 06HR: 06/2000Z SFC/FL200
S4145 W07145 - S4150 W07130 - S4300W07230 - S4230 W07245 - S4145 W07145
FL200/350 NO ASH EXP
FL350/550 NO ASH EXP
FCST ASH CLD + 12HR: 07/0200Z SFC/FL200 S4130 W07210 - S4130 W07145 - S4300 W07230 - S4230 W07245 - S4130 W07210
FL200/350 NO ASH
EXPFL350/550 NO ASH EXP
FCST ASH CLD + 18HR: 07/0800Z
SFC/FL200 S4100 W07230 - S4100 W07200 - S4230W07215 - S4300 W07300 - S4100 W07230
FL200/350 NO ASH EXP
FL350/550 NO ASH
NEXT ADVISORY: FURTHER INFORMATION WILL BE ISSUED IF ANY ASH
CLD IS DETECTED/OBSERVED

6. RECOMMENDATION

6.1 This study note presents the first draft of NOTAM templates proposals for volcanic ash events. It is recommended that the NOTAM templates are discusssed and commented by the group and considered to be further enhanced, based on the identified outstanding issues and the evaluation of the ICAO Volcanic ash exercise VOLCEX 11/01 in June 2010.

6.2 Considering that discussions are held within the ICAO International Volcanic Ash Task Force (IVATF) to determine common methodology for airspace description for dissemination by SIGMET and NOTAM/ASHTAM, it would be useful to report back to the IVATF the conclusions of the Subgroup discussions.

7. ACTION BY THE GROUP

7.1 The members of the AIS-AIMSG are invited to:

a) consider and discuss the content of this paper;

b) comment on the first draft of the NOTAM templates;

c) consider a continuation of the development of the templates, based on the comments from the study group, the identified outstanding issues and the outcome of the ICAO VOLCEX 11/01;

d) provide feedback to the IVATF; and

e) request the ad-hoc group consisting of Paul (Rapporteur), Steve and Greg to further report at the next AIS-AIMSG meeting.

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NOTAM templates proposals for volcanic ash events

Edition Number	**:**	**0.2**
Edition Date	**:**	**21 April 2011**
Status	**:**	**Draft**
Intended for	**:**	

DOCUMENT CHARACTERISTICS

TITLE		
NOTAM templates proposals for volcanic ash events		
	Publications Reference:	
	ISBN Number:	
Document Identifier	**Edition Number:**	0.2
	Edition Date:	21 April 2011
Abstract		
Authors		
Contact(s) Person	**Tel**	**Unit**
Asa Standar	+ 32 2 729 3186	DSR/CMN/IM

STATUS, AUDIENCE AND ACCESSIBILITY					
Status		**Intended for**		**Accessible via**	
Working Draft	☐	General Public	☐	Intranet	☐
Draft	☑	CND Stakeholders	☐	Extranet	☐
Proposed Issue	☐	Restricted Audience		Internet (www.eurocontrol.int)	☐
Released Issue	☐	*Electronic copies of this document can be downloaded from :*			

DOCUMENT CHANGE RECORD

The following table records the complete history of the successive editions of the present document.

EDITION NUMBER	EDITION DATE	REASON FOR CHANGE	PAGES AFFECTED
0.1	22 Feb 2011	First working draft for review	All
0.2	21 Apr 2011	Definitions included, restructuring of sections, revised NOTAM codes and content, editorial changes	Pg 7 -- 13

Contents

SUMMARY

This document provides draft proposals of NOTAM templates related to the operational impact and limited access of airspace and routes affected by volcanic ash, with reference to the action agreed by the AISAIM Study Group/3 (*Action agreed 9/3 Aeronautical information dissemination related to volcanic ash.*

The templates are developed with the purpose to create harmonisation in management of NOTAM messages related to a volcano eruption, where enhancement in ICAO guidance material for NOTAM creation was proposed to the Study Group.

The templates are providing a structured order of the information that shall be inserted in item E). The structure of the free text will create a harmonised output of the NOTAM, improving the readability of the message and processing of the data by the end user.

The proposed structure is taking into account the on-going progress in the digital NOTAM developments, following the digital NOTAM Event Specification as developed by the dedicated Focus Group.

The NOTAM templates created for navigation warnings and temporary airspace restrictions will be validated during the ICAO EUR/NAT Volcanic Exercise (VOLCEX 11-01).

1 Introduction

Purpose of document

As a consequence of the lessons learned by the European States AIS organisations regarding the need for harmonisation in management of NOTAM related to a volcano eruption events, the ICAO AISAIM Study group proposed that the ICAO guidance material be enhanced to include examples of a series of NOTAM related to the operational impact and limited access of airspace and routes affected by volcanic ash.

This document provides draft proposals of a series of NOTAM, for consideration by the AISAIM Study Group.

The NOTAM templates covers the following areas:

- airspace warnings
- airspace restrictions
- aerodrome/heliport closure
- route portion restriction/flight levels
- recommended NOTAM codes for the relevant subject

The document provides guidance to originators and publishers of NOTAM in how to structure free text for the above mentioned areas, in order to enhance the usabiltiy of the aeronautical information by the end users. The guidance provides for the full range of NOTAM required for warnings of the expected or potential volcanic activity and restrictions on airspace, airports and en route operations as a result of volcanic eruptions.
The templates are based on the structured data format of the digital NOTAM specification and the event scenarios, by which the information can be provided in a digital format (AIXM) suitable for automated computer processing.

Validation of NOTAM templates

The NOTAM templates created for navigation warnings and temporary airspace restrictions are included in the exercise directives of the ICAO EUR/NAT Volcanic Exercise (VOLCEX 11-01, 13-14 April 2011). Dissemination and reception of volcanic ash related aeronautical/meteorological information is part of the exercise objectives to ensure that NOTAM are issued in accordance with the provided templates by the participating States' NOTAM Offices. The effectiveness and timeliness of information dissemination to support airlines decision making will be evaluated by June 2011.

References

- ICAO Annex 15
- ICAO Doc 8126 AIS Manual
- ICAO Doc 9426 Air Traffic Services Planning Manual
- EUROCONTROL Operating Procedures for AIS Dynamic Data (OPADD)
- ICAO Volcanic Ash Contingency Plan - EUR 019/NAT 006
- Digital NOTAM Event Specification v 0.7
- Volcanic Ash NOTAM Templates NATS UK

Definitions

Danger area	An airspace of defined dimensions within which activities dangerous to the flight of aircraft may exist at specified times
International NOTAM office (NOF)	An office designed by a State for the exchange of NOTAM internationally
NOTAM	A notice distributed by means of telecommunication containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations
Prohibited area	An airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is prohibited
Restricted area	An airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is restricted in accordance with certain specified conditions

2 NOTAM Templates

General

1.1.1 Structure of NOTAM content

For each operational area, a short description is given for in which situations the examples can be used. It follows by a description of the structure of the NOTAM text, providing the sequence of the free text information to be inserted in item E). The structure of the information is in accordance with a dedicated digital NOTAM event scenario.

1.1.2 Filling instructions and NOTAM codes

The NOTAM examples include some instructions in completion of the qualifier line, the recommended NOTAM code and instruction in how to describe a published airspace in item E).

Navigation warnings

1.1.3 Type of operational impact/event

These templates apply for the issuance of navigation warnings for potential volcanic activity:
a) pre-eruption notification and outbreak of a volcano including detailed information regarding the activity,

b) volcano ash contamination areas forecast spread and movement, for which an area restriction has not been established

1.1.4 Structure of information

The examples follow the structure of the digital NOTAM event scenario *Ad-hoc special activity area: airspace type – activity/reason – location note (ex. name of volcano) – geometry (horizontal/vertical) – note(s);*

The structure of the information is illustrated by color coding in the NOTAM example 2.2.3.1 with the following meaning:
Red = airspace type
Blue =activity/reason for the area establishment
Green =location note of the activity
Purple = Geometry
Orange = airspace activity note #1(there may be as many Notes as necessary)
Brown = airspace activity note #2 (there may be as many Notes as necessary)

1.1.5 **NOTAM examples**

1.1.1.1 Pre-eruptive volcanic alert

(A0777/10 NOTAMN
Q) BIRD/QWWLW*/IV/NBO/W/000/999/6337N01901Wxxx**
A) BIRD B) 1002260830 C) 1002261100
E) PRE-ERUPTIVE ACTIVITY ALERT FOR VOLCANIC ACTIVITY, POSSIBLY INDICATING IMMINENT ERUPTION (VOLCANO KATLA 1702-03 ICELAND-S) AS FOLLOWS: CIRCLE WITH CENTRE 6337.5N 01901.5W AND RADIUS OF XXXNM***. VOLCANIC ASH CLOUD IS EXPECTED TO REACH 50.000 FEET AMSL FEW MINUTES FROM START OF ERUPTION. AIRCRAFT ARE REQUIRED TO FLIGHT PLAN TO REMAIN AT LEAST XXXM CLEAR OF VOLCANO AND MAINTAIN WATCH FOR NOTAM/SIGMET FOR AREA
F) GND G) UNL
*) *Recommended NOTAM code: QWWLW "Significant volcanic activity will take place…(specify)".*
***) A radius shall be included in the qualifier line in a way that encompasses the total area of influence of the NOTAM.*
****) XXX is a distance established by the Provider State and shall correspond to the radius in the qualifier line.*

1.1.1.2 Reporting on outbreak of volcanic eruption

(A0778/10 NOTAMR A0777/10
Q) BIRD/QWWLW/IV/NBO/W/000/999/6337N01901Wxxx
A) BIRD B) 1002261000 C) 1002261300
E) VOLCANIC ERUPTION CONFIRMED IN VOLCANO KATLA 17-2-03 ICELAND-S. CIRCLE WITH CENTRE 6337.5N 01901.5W AND RADIUS OF XXXNM. VOLCANO ASH CLOUD IS EXPECTED TO REACH 50 000 FEET AMSL. AIRCRAFT ARE REQUIRED TO REMAIN AT LEAST XXXNM CLEAR OF VOLCANO AND MAINTAIN WATCH FOR NOTAM/SIGMET FOR BIRD AREA.
F) GND G) UNL

1.1.1.3 Reporting on forecasted volcanic ash area [of Medium or High, High/Medium or High/Medium/Low contamination]

(A0207/10 NOTAMN
Q) EIAA/QWWLW/IV/NBO/W /000/200/xxxxNxxxxxE (orW)/xxx*)
A)EIAA B) 1005190700 C) 1005191300
E) VOLCANIC ASH AREA OF MEDIUM CONTAMINATION FORECAST AS FOLLOWS:
5243N 00853W - 5330N 00618W - 5150N 00829W - 5243N 00853W**)
F)SFC G) FL200
*) *The geographical reference (coordinates lat/long) shall represent the approximate centre of a circle whose radius encompasses the whole area of influence. A radius shall be included in a way that encompasses the total area of influence of the NOTAM.*
**) *Definition of the area should be done by radius/circle or coordinates only. Definition of airspace by the use of geographical or administrative features such as State borders, rivers, sea shores etc) is not supported by the digital NOTAM event scenario and is therefore not recommended. If operational*

necessary, this can be defined by providing a simplified polygon larger than the area and excluding a neighbouring FIR, for example.
Coordinates defining the lateral limits of the area (polygon) should be enumerated in clockwise order, each point separated by space-hyphen-space. The last and the first points of the list shall be the same.

Airspace restrictions

1.1.6 Type of operational impact/event

These templates apply for established temporary airspace restrictions for areas affected by volcanic activity:

a) temporary airspace restriction due to outbreak of volcanic eruption,

b) temporary airspace restrictions based on forecast ash contamination areas spread and movement

1.1.7 Structure of information

The examples follow the structure of the digital NOTAM event scenario *Ad-hoc special activity area: airspace type – activity/reason – location note (ex. name of volcano) – geometry (horizontal/vertical) – note(s);*

The structure of the information is illustrated by color coding in the NOTAM example 2.3.3.1 with the following meaning:
Red = airspace type
Blue =activity/reason for the area establishment
Green =location note of the activity
Purple = Geometry
Orange = airspace activity note #1(there may be as many Notes as necessary)
Brown = airspace activity note #2 (there may be as many Notes as necessary)

1.1.8 NOTAM examples

1.1.1.4 Established temporary airspace restriction for confirmed volcanic eruption

(A0255/11 NOTAMN
Q) BIRD/QRDCA*/IV/NBO/W/000/500/6337N01901Wxxx**
A) BIRD B) 1103260800 C) 1103261200
E) TEMPORARY DANGER AREA ESTABLISHED FOR CONFIRMED VOLCANIC ERUPTION VOLCANO KATLA 1702-03 ICELAND-S AS FOLLOWS: CIRCLE WITH CENTRE 6337.5N 01901.5W AND RADIUS OF XXXNM*** VOLCANIC ASH CLOUD REPORTED REACHING FL500. AIRCRAFT ARE REQUIRED TO REMAIN CLEAR OF AREA AND MAINTAIN WATCH FOR NOTAM/SIGMET FOR BIRD AREA.
F) SFC G) FL500
**) Recommended NOTAM code: QRTCA "Temporary restricted area activated", QRDCA "Danger area activated" and QRPCA " Prohibited area activated", based on States decision on established restriction.*
***) A radius shall be included in the qualifier line in a way that encompasses the total area of influence of the NOTAM.*

****) XXX is a distance established by the Provider State and shall correspond to the radius in the qualifier line*

1.1.1.5 Established airspace restriction including volcanic ash area of High [or High/Medium or High/Medium/Low] contamination

(A0503/10 NOTAMN
Q) EGGN/QRTCA/IV/NBO/W/000/350/xxxxNxxxxxW (or E)xxx*
A)EGPX B)1005182300 C)1005190500
E)TEMPORARY RESTRICTED AREA ESTABLISHED FOR VOLCANIC ASH AREA OF HIGH CONTAMINATION AS FOLLOWS: 5812N 00611W - 5718N 00216W - 5552N 00426W - 5629N 00652W - 5812N 00611W**)
F)SFC G) FL350

(A0886/10 NOTAMR A0884/10
Q) BIRD/QRDCA/IV/NBO/W/000/250/xxxxNxxxxxW(orE)xxx*
A) BIRD B) 1011301214 C) 1011301814
E) TEMPORARY DANGER AREA ESTABLISHED FOR VOLCANIC ASH AREA OF MEDIUM AND HIGH CONTAMINATION AS FOLLOWS:
7134N 00843W - 7134N 00801W - 6931N 00508W - 6606N 00732W - 6208N 01334W - 6254N 01419W - 6823N 00925W - 7134N 00843W**)
F)SFC G)FL250

**) The geographical reference (coordinates lat/long) shall represent the approximate centre of a circle whose radius encompasses the whole area of influence. A radius shall be included in a way that encompasses the total area of influence of the NOTAM.*
***) Definition of the area should be done by radius/circle or coordinates only. Definition of airspace by the use of geographical or administrative features such as State borders, rivers, sea shores etc) is not supported by the digital NOTAM event scenario and is therefore not recommended. If operational necessary, this can be defined by providing a simplified polygon larger than the area and excluding a neighbouring FIR, for example.*
Coordinates defining the lateral limits of the area (polygon) should be enumerated in clockwise order, each point separated by space-hyphen-space. The last and the first points of the list shall be the same.

Aerodrome/heliport closure

1.1.9 Type of operational impact/event

These templates cover the event of a temporary closure of an airport/heliport. The closure can be total (any traffic is forbidden) or partial (with the exception of particular operations, flight or aircraft categories).

1.1.10 Structure of information

The proposed structure of data items in the examples follow the digital NOTAM event scenario *Airport/Heliport closure*:
designator - *operational status* - *forbidden operation* - *permitted operation* – *reason* - *start closure* - *end closure* – *note(s)*
The structure of the information is illustrated by color coding in the NOTAM example 2.3.3.1, with the following meaning:
Red = designator
Blue =operational status (closure/limitation)
Green = forbidden operation (flight/aircraft)
Purple = permitted operation (flight/aircraft) and PPR details
Orange = reason for aerodrome/heliport closed
Indigo = start closure
Pink = end closure, schedule
Brown = further instructions concerning the airport closure Note (there may be as many Notes as necessary)

1.1.11 NOTAM examples

1.1.1.6 Aerodrome/Heliport closed for all traffic

(A1340/10 NOTAMN
Q)EFIN/QFALC/IV/NBO/A/000/999/6455N01252E/010
A)EFOU B) 1012151600 C) 1012151900EST
E) AD*) EFOU CLOSED FOR ALLTRAFFIC DUE TO VOLCANIC ASH AREA OF HIGH CONTAMINATION FORECAST FOR INFO CALL + 35885207700

*) *If the designator concerns a heliport, the word "HELIPORT" shall be included.*

1.1.1.7 Aerodrome/Heliport closed for IFR traffic

(A0468/10 NOTAMN
Q)EFIN/QFALT/I/NBO/A/000/999/6455N012521E/010
A)EFOU B) 1003211000 C) 1003211300EST
E) AD EFOU CLOSED FOR IFR TRAFFIC DUE TO VOLCANIC ASH AREA OF MEDIUM CONTAMINATION FOR INFO CALL + 35885207700

Restrictions on route portions/flight levels

1.1.12 Type of operational impact/event

These templates cover the event of a temporary closure of one or more route portions (could be on different routes) due to a common cause, such as the activation of a temporary restricted area.
If more than one route portion is concerned, the eventual vertical layers and schedules specified by the data originator are assumed to apply identically to all route portions (routes); if one route portion has different layers or schedules, it shall be considered a separate event and a separate NOTAM shall be issued.

1.1.13 **Structure of information**

The proposed structure of data items in the examples follow the digital NOTAM event scenario *Route portion closure*:
route availability - *route designator* - *start point* - *end point* - *direction* - *lower level* - *upper level* - *start time* - *end time* - *schedule* - *reason* - *note(s)*
The structure of the information is illustrated by color coding in the NOTAM example 2.5.3.1 with the following meaning:
Red = route availability
Blue =route designator
Green = start point (designator of the significant point, and the type in case of a navaid)
Purple = end point (designator of the significant point and the type in case of a navaid)
Indigo = lower level/upper level
Orange = start time/end time/schedule
Pink = reason (explanation of the situation that triggered the closure of the route)
Brown = further instructions concerning the route portion closure Note (there may be as many Notes as necessary)
:

1.1.14 **NOTAM examples**

1.1.1.8 Area Navigation (RNAV) routes portion closure with vertical layer

(A0515/10 NOTAMN
Q) ENOR/QANLC/I/NBO/E/285/400/6230N00300E/085
A)ENOR B) 1004151200 C) 1004151400EST
E) RNAV ROUTE SEGMENTS CLSD
UM 996 ISVIG – VIGRA DVOR/DME (VIG)
UL727 ISVIG – FLORO DVOR/DME (FLO)
UP607 INGAL – FLORO DVOR/DME (FLO)
FROM FL285 TO FL400
DUE TO VOLCANIC ASH AREA OF HIGH CONTAMINATION FORECAST

1.1.1.9 ATS route *) portion closure with vertical layer

A0515/10 NOTAMN
Q) LFFF/QARLC/IV/NBO/E/200/400/4920N0015E/060
A)LFFF B) 1011030800 C) 1011031000EST
E) ATS ROUTE SEGMENTS CLSD UL612 XAMAB – RESMI FROM FL 200 TO FL 400 03 NOV 2010 08:00 TO 03 NOV 2010 10:00EST DUE TO TEMPORARY ESTABLISHED DANGER AREA FOR VOLCANIC ASH AREA OF MEDIUM AND HIGH CONTAMINATION.

*)The second and third NOTAM code letters AR apply for conventional ATS routes, TACAN routes and routes other than Area Navigation routes.