

**Seventeenth Meeting of the Cross Polar Trans East Air Traffic Management Providers' Work Group
(CPWG/17)**

(Samara, Russia, 3-6 June 2014)

Agenda Item 2: Administrative Matters

VOLKAM14 Report

(Presented by State ATM Corporation)

SUMMARY

This working paper presents the VOLKAM14 and EUR (EAST) VOLCEX/SG/4 Meeting Report for discussion during the Air Navigation Service Providers Meeting.

1. Introduction

1.1. The second volcanic ash exercise in Kamchatka under the umbrella of the International Civil Aviation Organization (ICAO) that involved the Russian Federation, Japan and the United States, was conducted on 4-5 March 2014.

1.2. To summarize the conclusions of VOLKAM/14, a debrief meeting was held in ICAO EUR/NAT regional office on 13-14 March 2014. Lessons learned and corresponding recommendations were submitted to the meeting and discussed. The agreed recommendations were listed as tasks in an action plan to be dealt with by participants.

2. Discussion

2.1 The actions resulting from VOLKAM14 will be reviewed and discussed during the Air Navigation Service Provider's (ANSP) meeting.

3. Action by the Meeting

3.1 The meeting is invited to:

- a. review and discuss the information contained in this Working Paper;
- b. incorporate actions into the CPWG action item list for ANSPs to address.

SUMMARY OF DISCUSSIONS OF THE VOLKAM14 DEBRIEF & EUR (EAST) VOLCEX/SG/4 MEETINGS

(Paris, 13-14 March 2014)

1. Introduction

1.1 The debrief meeting for the volcanic ash exercise in Kamchatka in 2014 called VOLKAM14 was held in Paris, France from 13 to 14 March 2014 in conjunction with the Fourth meeting of the Volcanic Ash Exercises Steering Group for the (far) Eastern Part of the EUR Region (EUR (EAST) VOLCEX/SG/4).

1.2 The VOLKAM14 debrief meeting was chaired by the Exercise Leader, Alexey Buevich, head of ATFM and Strategic Planning Main ATM Center (MATMC) of Russia. The Secretary of the meeting was Mr. Christopher Keohan of the ICAO EUR/NAT Office, Paris.

1.3 The second volcanic ash exercise in Kamchatka under the guise of ICAO that involved the three States: Russian Federation, Japan and the United States, was conducted on 4-5 March 2014. As proven in October 2013, the first exercise assisted operators in conducting operations when the volcano named Kluchevskoy erupted and winds transported the volcanic ash cloud over the northern Pacific routes. Coordination from dispatch (e.g. American Airlines) with MATMC allowed for a flight to be re-routed during flight and further coordination conducted with Anchorage ARTCC as well as Canadian ACCs. Other positive feedback was provided by United Airlines. Continued coordination improvements will yield benefits to stakeholders noting VOLKAM14 was the first exercise that practiced the use of contingency routes and procedures between Petropavlovsk-Kamchatsky and Fukuoka Oceanic FIRs as per an exercise letter of agreement between the Russian Federation and Japan. Furthermore, VOLKAM14 demonstrated the correct routing of special air-reports on volcanic ash from Area Control Centre (ACC) to Meteorological Watch Office (MWO) to Volcanic Ash Advisory Centre (VAAC) as well as to SADIS and WIFS. VAACs Tokyo and Anchorage demonstrated a successful handover, noting the acknowledgement procedure could be improved. The debrief meeting was to note the successes and at least as important to develop recommendations for future consideration. Associated actions were also developed with assignments and dates.

1.4 The meeting was attended by 10 experts representing 3 States, one airline and ICAO. The list of participants and contact list are presented at **Appendix A** and **Appendix B** respectively. The group adopted the Provisional Agenda as presented at **Appendix C**.

2. Brief account of VOLKAM14 aims and objectives

2.1 The group recalled the aims and objectives and based on input provided by participating agencies (Volcano Observatories (VO), Volcanic Ash Advisory Centres (VAAC), Meteorological Watch Offices (MWO), international NOTAM offices (NOF), Area Control Centres (ACC), National Air Traffic Management Centres (ATMC), Civil Aviation Authorities (CAA) and airlines) significant comments and main themes were mapped to the aims and objectives as reproduced below.

- Demonstrate coordination procedures between all participating parties (ANSPs, ATM Centres, AIS, VO, VAACs, MWO, users)

- *Achieved – coordination demonstrated as products were available to users, re-routes requested and approved for Russian Federation airspace and teleconferences conducted.*

Note that Petropavlovsk-Kamchatsky is sometimes referred to as PK in this report

Note that KVERT in the Russian Federation, on behalf of the Institute of Volcanology and Seismology (IVS) FED RAS, is responsible for providing information on volcanic activity to international air navigation services for the airspace users.

- Demonstrate tactical re-routes
 - *Achieved – multiple simulated re-routes submitted by airlines to MATMC – some impacting Russian Federation airspace and approved – others involving other airspace (e.g. Fukuoka). The contingency re-route as per the Exercise Letter of Agreement (LOA) between PK and Fukuoka Oceanic FIRs utilized multiple times. Further testing should include other centres (e.g. Fukuoka, Oakland, and Anchorage) to manage re-routes in their airspace in the next exercise (receive re-route, consider, approve or provide another alternate re-route).*
- Demonstrate VAAC Tokyo and VAAC Anchorage handover
 - *Achieved – handover completed in approximately 22 minutes. Extra clarity on handover confirmation may be needed in future and the time of handover could be reduced.*
- Demonstrate transmission of air-reports on volcanic ash in accordance to Annex 3
 - *Achieved – two special air-reports were sent as above (dispatch simulating phase from aircraft to ACC) and VAAC received via AFTN and email. In addition SADIS received reports, noting this procedure if practiced by PK ACC and Yelizovo MWO in real events will make this a model for other ACC/MWOs to use. Need to assure special air-reports in real-time are disseminated in the same manner.*
- Demonstrate information sharing via teleconferences and website
 - *Achieved – websites utilized (VAA/VAG on VAAC Tokyo and VAAC Anchorage websites, VONA on KVERT, SADIS with the products already listed as well as special air-reports on volcanic ash and NOTAM (will check on those sent from Moscow). Teleconferences went well with shared information noting a technical glitch that was overcome.*

3. Recommendations

3.1 Recommendations were formulated which may be considered in future real events as well as future exercises.

- **Lesson 1: Formalize a permanent LOA between PK and Fukuoka for handling cross border flights (including contingencies)**
 - Continue working on establishing contingency procedures and a permanent ATS route between PK and Fukuoka FIRs
- **Recommendation 2: Ensure timely filing of departure information for flights through Russian far east from US airports of departure by FAA**

- Recommendation 3: **Formalize the procedure for generating/adjusting PACOTS in case of contingencies**
- Recommendation 4: **VAAC Tokyo and Anchorage handover procedure to be improved (e.g. acknowledgement of handover)**
- Recommendation 5: **VAAC Tokyo consider issuance of VAA/VAG every 3 hours (versus 6 hours), when necessary**
 - This would assist airlines in their re-routes by not overcompensating for the forecast of volcanic ash
- Recommendation 6: **VAAC Tokyo to include colour code in VAA in RMK section referencing VONA**
- Recommendation 7: **VAAC Tokyo to replace NO VA EXP with NOT AVBL in first VAA/VAG related to an eruption in the forecast section**
- Recommendation 8: **For real events, special air-reports on volcanic ash via voice to ACC be distributed to MWO as well as VAAC via AFTN (Russian Federation to check). MWO distributes to SADIS and WIFS with correct WMO AHL.**
 - Monitor IAVWOPSG Conclusion 8/21 regarding the dissemination of special air-reports on volcanic ash to VAACs
- Recommendation 9: **Use web-based operational conferences and utilization of VOLKAM Sheet**
 - Can post relevant information for situational awareness; distribute VOLKAM Sheet in advance to anticipate what will be discussed and reference when necessary; roll call would not be necessary; monitor IAVWOPSG conclusion 8/7 regarding Collaborative Decision Analysis and Forecasting (CDAF)
- Lesson 10: **Investigate having animated models (e.g. PUFF, Ash3D or HYSPLIT, JMA-GATM) available for exercises and real events**
 - Monitor IAVWOPSG Conclusion 7/22 regarding a VAAC common web page intended to share dispersion model output amongst VAACs

3.2 Other considerations for VOLKAM15 include the following:

- Consider a continuous eruption
 - Consider including VAA/VAG from VAAC Anchorage in Exercise Directive and consequently the respective MWO for issuance of SIGMET
 - If still in trial mode, consider having T+24h VAG available on VAACs' websites (this would assist in formulating PACOTS for next day – see also IAVWOPSG Conclusion 8/18 regarding trial product for volcanic ash information at T+24h)
 - Consider transporting the volcanic ash cloud over Fukuoka FIR (and possibly others)
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- Consider referencing VAA/VAG and SIGMET messages in VONA (would best apply to the second VONA when VAA/VAG and SIGMET messages are available – e.g. see current VAA/VAG and SIGMET – generic message)
- Consider including other centres (Fukuoka, Oakland, Anchorage) in re-route process
- Consider routing special air-reports on volcanic ash in other FIRs
- Consider testing voice special air-reports on volcanic ash by pilot providing test special air-reports on volcanic ash to ACC for further dissemination (instead of simulated via email from dispatch)
- Consider maintaining master document containing email addresses of participants
 - Operational phone numbers will be collected for real events and placed in a draft contingency plan

3.3 Other issues that could not be addressed in full by the group include:

- Confusion with volcanic numbering – legacy numbering used by KVERT and VAAC Tokyo, but VAAC Anchorage used new numbering system noting at the time of the exercise there was no notification of implementation of the new numbering system (IAVWOPSG/8 decided that the new numbering system be implemented by VAACs on 1 March 2014 noting VAAC Tokyo will not implement it until the end of its review process, however, this information was not yet available at the time of the exercise)
- Latitude/longitude for the volcano was different in VAA produced by VAAC Tokyo than that provided in SIGMET – but note that once the new numbering system is implemented by stakeholders, this issue should be remedied (by VOLKAM15)
- SIGMET is supposed to be issued by a MWO for the FIR it is responsible for, explaining why SIGMET limits at times correspond with an FIR boundary, though the phenomenon goes beyond the boundary. The meeting noted that the MET Divisional meeting will address the issuance of SIGMET advisories from regional centres and would monitor the results of that meeting in this regard. Also, MWO coordination with border FIRs was encouraged.

3.4 The Secretariat noted that the WMO AHL for special air-reports on volcanic ash for Yelizovo MWO would be added to the database displayed on the ICAO EUR/NAT website. Other WMO AHL for the Russian Federation would be added as well, when available (to inquire at PT/EAST/14).

3.5 The Secretariat would also inquire with the EUR Data Management Group (DMG) why multiple occurrences of the same SIGMET issued from Yelizovo MWO was received from some participants (was this an issuance or a dissemination issue).

EUR (EAST) VOLCEX/SG/4

3.6 The Fourth meeting of the Volcanic Ash Exercises Steering Group for the (far) Eastern Part of the EUR Region (**EUR (EAST) VOLCEX/SG/4**) was held in Paris, France on 14 March 2014 to mainly address recommendations provided by the VOLKAM14 debrief meeting, develop a future work programme and review Terms of Reference of the group. The group adopted the provisional agenda as provided in **Appendix D**.

3.7 The participants of the EUR (EAST) VOLCEX/SG/4 meeting were the same as the VOLKAM14 debrief meeting. The EUR (EAST) VOLCEX/SG/4 meeting was chaired by Alexey Buevich, head of ATFM and Strategic Planning Main ATM Center of Russia. The Secretary of the meeting was Mr. Christopher Keohan of the ICAO EUR/NAT Office, Paris.

4. Actions Agreed

4.1 To assure that the recommendations were dealt with, the EUR (EAST) VOLCEX/SG/4 meeting agreed to develop a table of actions and assignments as well as time goals based on recommendations above. The table of actions agreed is provided in **Appendix E**.

4.2 In addition, actions agreed from VOLKAM13 were reviewed and were mainly closed except those relating to contingency procedures. As a result, the group agreed that formalizing new ATS route(s), re-route procedures, web-based teleconferences and any other pertinent information relating to volcanic ash contingency in the northern Pacific should be maintained in a document and posted on the ICAO EUR/NAT Regional Office website. This could be available by the end of 2014.

5. Cross regional cooperation

5.1 Developments from that group such as agreeing on a contingency plan could be considered at an inter-regional meeting such as the Trans-Regional Airspace and Supporting ATM Systems Steering Group (TRASAS), which is expected to convene in the second half of 2014.

6. Future work programme of EUR (EAST) VOLCEX/SG

6.1 The future work plan was developed for the period from 2014 until 2016 as provided in **Appendix F**.

7. Terms of reference of EUR (EAST) VOLCEX/SG

7.1 The terms of reference of the EUR (EAST) VOLCEX/SG was reviewed and the group proposed updates are provided at **Appendix G** noting that these proposals would be reviewed by the EANPG COG.

8. Any other business

8.1 The VOLKAM14 debrief meeting closed at approximately 1700 hours on 13 March 2014 and the EUR (EAST) VOLCEX/SG/4 meeting closed at approximately 1130 hours on 14 March 2014.

APPENDIX A

VOLKAM/14 Debrief & VOLCEX/SG/4

13 & 14 March 2014

LIST OF PARTICIPANTS

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Takayuki HARADA

Akimitsu SAKURAI

RUSSIAN FEDERATION

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APPENDIX B**VOLKAM/14 Debrief & VOLCEX/SG/4***13 & 14 March 2014***LIST OF CONTACTS**

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13 March 2014

Provisional Agenda

APPENDIX D

EUR (EAST) VOLCEX/SG/4

14 March 2014

ICAO EUR/NAT Regional Office, Paris

Provisional Agenda

14 March 2014		
Time	Item	Lead
0900	<i>Registration</i>	--
0930	Welcome and opening of the meeting , including: <ul style="list-style-type: none"> • Adoption of the provisional agenda 	Secretary
1000	VOLKAM14 lessons learned and recommendations , including: <ul style="list-style-type: none"> • Review • Develop action plan, if warranted 	Chair
1030	<i>Coffee break</i>	--
1045	Cross-regional cooperation , including: <ul style="list-style-type: none"> • How to create common plan for NOPAC area (far eastern EUR Region; northeast APAC Region; northwest NAM Region) under international framework • Appropriate forum to address inter-regional issues identified in volcanic ash exercises 	Chair/Secretary
1200	<i>Lunch</i>	--
1330	Future work programme , including <ul style="list-style-type: none"> • A sketch of dates of future exercises • A sketch of host meeting locations 	Chair/Secretary
1515	<i>Coffee break</i>	--
1545	Review TORs Any other business	Secretary

APPENDIX E

Actions agreed – outcomes from VOLKAM13 updated (all closed – except those related to contingency) / included outcomes from VOLKAM14

Updated 14 March 2014

Task (from VOLKAM13)	assigned	time
13-1. Consider the development of LOA (especially for contingency situations) between Oceanic Sector of Fukuoka ATMC and Petropavlovsk-Kamchatsky ACC ; other adjacent FIRs and/or ACCs who already have LOAs need to include contingency reroutes and consider the need to establish transitions from NOPAC to Russian Trans-east Routes and vice-versa in this area or an alternative contingency coordination for specific cases. To be considered in bilateral meeting between Japan and Russian Federation to be forwarded to Cross Polar Working Group (CPWG)	Russian Federation, Japan, US <i>Aircraft info includes:</i> <i>Aircraft ID, type, DEP, DEST, original route, request-route, FIR position, time and altitude</i>	May 2013 (WP for CPWG meeting and/or consider ICAO inter-regional coordination group as well) Aug 2013: For VOLKAM14 – arrangement made between Fukuoka ATMC Oceanic Sector and Petropavlovsk ACC for contingency situation. Communications via commercial telephone would allow for transferring control of aircraft between two FIRs. The temporary LOA to be developed for the exercise would include information needed such as reason; aircraft info; radio frequency and other information. JCAB to provide draft LOA to PK ACC and finalized draft to be sent to State ATM Corporation for consideration and approval by FATA and Ministry of Transport. Mar 2014: CLOSED – see 14-01 for followup
13-2. Consider enhancing procedures for communications (using various methods) in a real event considering the various participants (ATM Centers, ACCs, etc...) and consider including in contingency plan being developed by CPWG considering the ATM VACP template	Russian Federation, Japan, US	May 2013 (CPWG and/or consider ICAO inter-regional coordination group as well) Aug 2013: To be developed (offline) Mar 2014: consider exercise directive as starting point of contingency plan – State where volcano erupts will initiate web-based teleconference. Update contact information for realtime events with phone numbers and emails
13-3. Clarify procedures between ATS Providers and operators to address reroutes and associated	Russian Federation, US	May 2013 (CPWG)

<p>ACC handover coordination whether they are tactical (en-route) or pre-flight and publish them in national AIPs and reference in contingency plan</p>		<p>Aug 2013: Handled by CPWG</p> <p>Mar 2014: formalize re-route procedures – AA and UA to start and add in contingency plan (including procedures from AIP)</p>
<p>13-4. Communicate to user the confidence in PACOTS and west bound tracks decreases considerably after 18 hours due to the absence of proper guidance (VAG only valid to 18 hours in accordance to Annex 3)</p> <p>Monitor IAVWOPSG on developments related to VAG, particularly to the extent of forecast</p> <p>Note that WP/31 of IAVWOPSG/7 recognizes Recommendation 4/17 of IVATF that includes “<i>assess the feasibility of providing volcanic ash advisories (VAA), including graphics (VAG), beyond the current T+18 hour requirement</i>”</p>	<p>Japan and United States</p> <p>VAAC Tokyo/Anchorage</p>	<p>March 2013 (IAVWOPSG/7)</p> <p>Aug 2013: Add note to VOLKAM14 Ex Dir</p> <p>Mar 2014: CLOSED – included in VOLKAM14 Exercise Directive</p> <p>Aug 2013: IAVWOPSG C7/28 – in development noting concerns with reduced confidence in products and AFTN limitations (maximum 1800 characters)</p> <p>Mar 2014: CLOSED – it is in hands of global group - IAVWOPSG/8 Conclusion 8/18 calls for a trial product for volcanic ash information at T+24 hours (will include confidence levels for the aerial coverage of the ash cloud, be made available in graphic format only via the VAACs Internet web site, be made available for provision during a trial period starting 1 July 2014, that extends at least 6 months, and be evaluated by the users during the trial period) – report to be provided at IAVWOPSG/9</p>
<p>13-5. States consider the use of Danger Area in the context of IVATF Recommendation 4/16 (<i>That States should not declare a danger or restricted area in respect of volcanic ash, except over and in proximity to an erupting volcano</i>). Note that this is aligned with section 1.2 of the ATM VACP template</p> <p>Consider most appropriate term (Danger Area, Restrictive Area, Prohibitive Area) for this subregion (northwest Pacific that includes ICAO Regions EUR,</p>	<p>Japan, Russian Federation, US</p>	<p>Aug 2013: Note in VOLKAM14 Ex Dir indication Russian Federation will use Danger Area over volcano, while US uses temporary flight restriction (TFR) and Japan - procedure to be determined</p> <p>Mar 2014: CLOSED – Danger Area not used for Kamchatka/Kurile events</p> <p>(all three States do not use Danger Area)</p>

APAC and NAM) and adapt the ATM VACP template, if necessary		
<p>13-6. Reconsider the NOTAM LOA that exists between PK ACC and Anchorage ARTCC to determine if there is a need to publish NOTAMs on volcanic ash for PK FIR by Anchorage and forward to CPWG</p> <p><i>*Letter of Agreement (LOA) between PK ACC and Anchorage ARTCC concerning volcano information state PK ACC will immediately notify Anchorage ARTCC of any observed or reported volcanic activity, and then Anchorage ARTCC is tasked with issuing a NOTAM advising of significant volcanic activity.</i></p>	Russian Federation and United States	<p>May 2013</p> <p>Aug 2013: Under consideration – consult users to see if there is benefit under current arrangement</p> <p>Mar 2014: Keep arrangement for the time being until PK issues NOTAM consistently</p>
<p>13-7. Russian AIS to consider expediting publication of NOTAMs specifically for volcanic ash</p>	Russian AIS	<p>TBD</p> <p>Aug 2013: Considering template in English to save time – to include in VOLKAM14 Ex Dir</p> <p>Mar 2014: CLOSED – NOF Moscow issued NOTAM in range of 10-20 minutes after request received during VOLKAM14</p>
<p>13-8. Formalize teleconferences for realtime events taking into consideration collaborative decision making (CDM) to address matters such as published reroutes via NOTAMs and operator's needs. The CDM process is intended to develop a consensus amongst ANSPs and operators noting that operators utilize the safety risk assessment approach. Procedures on arranging teleconferences and their attributes (lead considering where the volcano erupts, participants, their roles, use of web portal for information sharing, language, directive to mute microphones unless otherwise asked) should be provided in the contingency plan and considered by CPWG.</p>	<p>Russian Federation, Japan, United States with assistance from Eurocontrol</p> <p>ICAO (for inclusion in draft ATM VACP)</p>	<p>Progress to be reported in May 2013</p> <p>Aug 2013: Include draft telecon instructions with suggestions from Eurocontrol and Japan (VOLKAM Sheet to be uploaded on common website) in VOLKAM14 Ex Dir</p> <p>And add note that due to language barrier VAAC Tokyo cannot commit to realtime teleconferences</p> <p>(Add note to VOLKAM15ExDir)</p> <p>Mar 2014: once web-based teleconference procedures are in place (Alexey), include in contingency document</p>
<p>13-9. Exercise Directive include VAAC handover from VAAC</p>	Japan, United States, Exercise	TBD – 1-3 months before next

Tokyo to VAAC Anchorage to test coordination (including sharing of information such as Volcano Activity Reports (VARs)) taking into consideration discussion on handover procedures in IAVWOPSG/7	Leader	<p>exercise, if appropriate</p> <p>Aug 2013: IAVWOPSG C7/15 – examples of handover to be included in Doc 9766</p> <p>The handover request sheet used by VAACs Anchorage Tokyo and will be tested in VOLKAM14</p> <p>Mar 2014: CLOSED – see 14/04 for followup</p>
<u>13-10.</u> Test VAA/VAG to be available on website or link as specified in the Exercise Directive (noting this is not an issue with realtime events) with message indicating that the web site be used for back-up purposes (noting users should obtain VAAs and VAG via AFTN and SADIS/WIFS respectively)	Japan	<p>TBD – 1-3 months before next exercise</p> <p>Aug 2013: Test website developed by VAAC Tokyo with disclaimer that the website is used for backup only. URL will be provided in VOLKAM14 Ex Dir.</p> <p>Mar 2014: CLOSED – demonstrated in VOLKAM14</p> <p>(the disclaimer note is not yet posted on the VAAC Tokyo's website available for real-time events)</p>
<p><u>13-11.</u> Clarify the status and description of eruption and if changes occur and make the information easily available</p> <p>Monitor means of issuance of VONA in guidance material (ICAO Doc 9766) expected by November 2013 to support the introduction of VONA in Amendment 76 to Annex 3 (Note 2 of 4.1).</p> <p>Indicate duration of event and if additional ash is expected.</p> <p>VONA should comply with VONA format and consider future changes provided by WOVO</p> <p>Consider posting test VONA on website</p> <p>Clarify how differences of volcanic ash height observed and reported would be handled by</p>	<p>ICAO</p> <p>KVERT</p> <p>KVERT</p> <p>KVERT</p> <p>VAAC Tokyo/Anchorage and Exercise Leader</p>	<p>Aug 2013: VONA may be used by VO (Am 76 to Annex 3), but is not required by VAAC – in VOLKAM14 Ex Dir will use encouraged to use colour code (VAAC Tokyo will place source of information in remarks section - to be determined)</p> <p>Mar 2014: IP on status from Japan provided</p> <p>-</p> <p>Aug 2013: KVERT reported compliance</p> <p>Mar 2014: CLOSED</p> <p>Aug 2013: KVERT will post test VONA on website</p> <p>Mar 2014: CLOSED – demonstrated VOLKAM14</p> <p>Aug 2013: To add note in VOLKAM14 Ex Dir</p> <p>Mar 2014: CLOSED</p>

<p>VAAC Tokyo (e.g. maximum height used) as well as reporting in terms of FL for consistency. Include in Exercise Directive and contingency plan.</p> <p>Monitor results of IAVWOPSG with reference to including colour code in VAA (noting IAVWOPSG invited WOVO to develop further suitable guidance material in view of fostering the increased use of the aviation colour code and VONA by VOs)</p>	<p>VAAC Tokyo/Anchorage</p>	<p>See above</p>
<p>13-12. Clarify in next exercise when to include volcanic ash forecast in SIGMET and provide templates on SIGMET well in advance. Yelizovo (PK) MWO should also utilize the test code and provide SIGMET in a timely manner.</p> <p>Can consider interim SIGMET based on the wind (and/or indicate moving toward an FIR)</p> <p>Investigate if VAG could include FIR boundaries</p>	<p>Exercise Leader/ ICAO</p> <p>VAACs – monitor developments of IAVWOPSG</p>	<p>Aug 2013: First 90-120 minute procedure to be circulated in draft VOLKAM14 Ex Dir with examples for consideration by MWO</p> <p>Mar 2014: CLOSED – as SIGMET was provided for eruption and after VAA/VAG with ash extent was available (a little more than one-hour after the eruption)</p> <p>Aug 2013: End user may adapt for local use – could be uploaded for VOLKAM14 – website to be determined. Note: Am 77 to Annex 3 will likely enable user to adapt products in XML/GML (Nov 2016). IAVWOPSG C7/25 and 7/26.</p> <p>Mar 2014: IAVWOPSG and MARIE-PT in coordination on exchanging VAA/VAG in digital form</p>
<p>13-13. Include active participation by airlines in providing special air-reports on volcanic ash in the next Exercise Directive using routing in accordance to Annex 3 (aircraft-ACC-MWO-VAAC)</p>	<p>Exercise Leader/ airlines/ ICAO</p>	<p>Aug 2013: Will practice routing in VOLKAM14 (routing from Moscow to Yelizovo MWO to VAAC Tokyo)</p> <p>Normally, air-reports are received at Yelizovo MWO by voice</p> <p>Mar 2014: CLOSED – successfully demonstrated in VOLKAM14</p>
<p>13-14. Consider compressing the time between the second and third issuance of VAA/VAG in the Exercise Directive (for test</p>	<p>Exercise Leader/ ICAO</p>	<p>Aug 2013: To be considered</p> <p>Mar 2014: CLOSED – conducted</p>

purposes only)		in VOLKAM14
Task (from VOLKAM14)	Assigned	Time
14-1. Formalize a permanent LOA between PK and Fukuoka for handling cross border flights (including contingencies) Continue working on establishing contingency procedures and a permanent ATS route between PK and Fukuoka FIRs	Russian Federation/ Japan	Late 2014 / early 2015
14-2. Ensure timely filing of departure information for flights through Russian far east from US airports of departure by FAA	Russian Federation/ United States (FAA)	Late 2014
14-3. Formalize the procedure for generating/adjusting PACOTS in case of contingencies	Japan/United States	Late 2014
14-4. VAAC Tokyo and Anchorage handover procedure to be improved (e.g. acknowledgement of handover)	Japan/United States	Mid 2014
14-5. VAAC Tokyo consider issuance of VAA/VAG every 3 hours (versus 6 hours), when necessary	Japan	Mid 2014
14-6. VAAC Tokyo to include colour code in VAA in RMK section referencing VONA	Japan	Mid 2014
14-7. VAAC Tokyo to replace NO VA EXP with NOT AVBL in first VAA/VAG related to an eruption in the forecast section	Japan	Mid 2015
14-8. For real events, special air-reports on volcanic ash via voice to ACC be distributed to MWO as well as VAAC via AFTN (RF to check). MWO distributes to SADIS and WIFS with correct WMO AHL. Monitor IAVWOPSG C8/21 regarding the dissemination of special air-reports on volcanic ash to VAACs	Russian Federation (check if SADIS receives UA from US/Japan) Japan/United States (VAACs)	Continuous/ status Aug 2014 Report to SG/5 meeting

14-9. Use web-based operational conferences and utilization of VOLKAM Sheet	Russian Federation to ask Eurocontrol to provide web-based conference facilities	Mid 2014
Monitor IAVWOPSG C8/7 regarding Collaborative Decision Analysis and Forecasting (CDAF)	Japan/United States (VAACs)	Report to SG/5 meeting
14-10. Investigate having animated models (e.g. PUFF, Ash3D or HYSPLIT, JMA-GATM) available for exercises and realtime events	Japan/United States (VAACs)	Continuous (status Aug 2014)
Monitor IAVWOPSG C7/22 regarding a VAAC common web page intended to share dispersion model output amongst VAACs	Japan/United States (VAACs)	Report to SG/5 meeting

APPENDIX F

Future work programme of VOLKAM exercises

2014-2016

Updated 14 March 2014

Date	Activity	Location
13-14 March 2014	VOLKAM14 debrief meeting/ SG/4 meeting	ICAO RO, Paris
5-7 Aug 2014 (confirm in one week)	VOLKAM15 prep meeting/ SG/5 meeting	Petropavlovsk-Kamchatsky
Mid-May 2015	VOLKAM15	Northern Kurile Islands
July 2015	VOLKAM15 debrief meeting SG/6 meeting and VOLKAM16 planning meeting	Petropavlovsk-Kamchatsky TBC
Spring 2016	VOLKAM16	Volcano in Kamchatka or Kurile Islands
Summer 2016	VOLKAM16 debrief meeting / SG/8 meeting and VOLKAM17 planning meeting	TBD

APPENDIX G

TERMS OF REFERENCE OF EUR (EAST) VOLCEX/SG

The Volcanic Ash Exercises Steering Group for the (far) Eastern part of the EUR Region (EUR (EAST) VOLCEX/SG), has been established by the EANPG COG Decision 48/04 (held 6 to 8 October 2010). The main task of the EUR (EAST) VOLCEX/SG is to initiate and maintain a programme of regular volcanic ash exercises in the (far) Eastern Part of the EUR Region.

TERMS OF REFERENCE

Objective: Improve the response to volcanic eruptions and volcanic ash contamination by the relevant national supervisory authorities, service providers (ATS, AIS, ATFM, MET) and airspace users (airlines) in the (far) Eastern part of the EUR Region through to organizing of regular volcanic ash exercises in order to validate and continually improve the common volcanic ash contingency plan and procedures for the EUR and NAT Regions.

Tasks:

- Co-ordinate with all participants in the volcanic ash exercises (ACCs, airlines, VOs, VAACs, MWOs, National ATMCs ~~MATMC~~) the schedule for the exercises and their scenarios; ensuring that exercises cover the (far) Eastern part of the EUR Region that could be affected by volcanic ash, with impact scenarios on trans-east, ~~trans polar and/or cross polar routes~~ and north Pacific (e.g. NOPAC and PACOTS) routes.
- Develop and keep under review regional ~~(define)~~ VA exercise procedures, including VA Exercise Operating Instructions (VOLCEX OPINS), and make improvements based on the lessons learnt. (Regional VA exercise procedures, and other relevant material, to be posted on the EUR/NAT Regional Office website).
- Organize in parallel with the VA exercises, awareness events such as seminars and presentations, in order to enhance the awareness of the participants regarding the hazardous effects of volcanic ash and the established contingency measures.
- Based on the outcome of the VA exercises, propose to EANPG COG improvements to the ~~common~~ regional volcanic ash contingency plan. ~~for the EUR and NAT Regions~~
- Report the results of its activities to the EANPG COG on an annual basis. The group should also liaise with the METG of EANPG. Additionally, through the Secretary, the group should liaise with the European and North Atlantic Volcanic Ash Exercises Steering Group (EUR/NAT VOLCEX/SG) of the EANPG COG and NAT IMG.

Composition to include appropriate fields of expertise such as ATM, MET, airspace users, regulatory authorities, VOs: Japan (~~VAAC Tokyo~~), Russian Federation (~~incl. the Main ATM Centre (MATMC) in Moscow~~), United States of America (~~incl. VAAC Anchorage~~), ICAO (~~Secretary~~) and IATA.

[Rapporteur(s) ~~to be determined at EUR (EAST) VOLCEX/SG/1~~ – Russian Federation]

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