

**SUMMARY OF DISCUSSIONS OF THE
DEBRIEF MEETING OF THE EUROPEAN AND NORTH ATLANTIC
VOLCANIC ASH
EXERCISE in 2017 (EUR/NAT VOLCEX17)**

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PLANNING MEETING OF VOLCEX18

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VOLCEX/SG/13

(Lisbon, 16-17 January 2018)

1. Introduction

1.1 The Debrief Meeting of the European and North Atlantic Volcanic Ash Exercise in 2017 (EUR/NAT VOLCEX17) was held in Lisbon, Portugal on 16 January 2018 and hosted by NAV Portugal.

1.2 The meeting was chaired by Jose Amaral of NAV Portugal, and the Secretary of the meeting was Mr. Christopher Keohan of the ICAO EUR/NAT Office, Paris.

1.3 The meeting was attended by 48 experts representing 16 States, 5 airlines and 5 International Organizations (Eurocontrol, European Commission, IATA, IFALPA and ICAO). The list of participants and contact list are presented at **Appendix A** and **Appendix B** respectively.

1.4 The meeting adopted the updated provisional agenda as provided in **Appendix C**.

2. Recapitulation of Exercise VOLCEX17

2.1 The meeting recalled the VOLCEX17 Exercise Scenario that involved a simulated eruption of Agua de Pau in the Azores, Portugal erupting at 0930 UTC on 28 November 2017 to impact the Mediterranean belt into Central Europe on the Exercise Days 29 and 30 November 2017 from 0800 – 1600 UTC on both days. The objectives of the exercise were the same as VOLCEX16 (except for testing column mass loading charts) as well as to verify the number of special air-reports received at Network Manager and VAACs and test cross-border SIGMET coordination.

2.2 VAAC Toulouse generated the Volcanic Ash Advisories (VAA) and Volcanic Ash Advisories in Graphical Form (VAG) and Météo France generated Volcanic Ash Concentration Charts at 6 hourly intervals in support to the EUR/NAT Volcanic Ash Contingency Plan.

2.3 Teleconferences organized by Network Manager discussed the current Air Traffic Management (ATM) network situation (based on Air Traffic Flow Management (ATFM) simulation) as well as outlook (based on VAAC charts) for the following 24 hours.

2.4 In addition, the current ATM situation and responsiveness to airline operators need for operational flexibility was discussed based on a screenshot from ATFM simulation tool that showed: 1) all flights rerouting around larger areas of high ash concentration (exercise assumption); 2) cancelled flights departing to and from airports located under areas of high ash concentration; and 3) ATFM delays necessary due to rerouting.

2.5 Participants of VOLCEX17 included 38 airline operators, IATA, Aircraft Operator Crisis Coordination Cell (AOCCC), European Aviation Crisis Coordination Cell (EACCC), Network Manager, 14 ANSPs, 12 MWOs, 8 NOFs, 11 Regulators, VAAC Toulouse (VAAC London backup), and 8 other organisations.

2.6 The meeting recalled the aims and objectives of VOLCEX17 which are reproduced here within.

- Exercise the merged EUR/NAT Volcanic Ash Contingency Plan (EUR Doc 019, NAT Doc 006, Part II)
 - For individual States: test the effectiveness of their national procedures in accordance with the ICAO plan;
 - For all participants: test the effectiveness of local (organizational) volcanic ash contingency plans and/or procedures;
 - Exercise the origination, dissemination, reception and use of volcanic ash related aeronautical/meteorological information (including VAA/VAG, VA supplementary information, VA SIGMET and NOTAM and special air-reports on volcanic activity); ensure that NOTAM is in accordance with Annex 15 and the ICAO EUR/NAT Volcanic Ash Contingency Plan; and
- Exercise and evaluate crisis coordination between the various stakeholders through EACCC (the European Aviation Crisis Coordination Cell) and the Aircraft Operator Crisis Coordination Cell (AOCCC);
- Test the ATM responsiveness to need of AO operational flexibility;
- Test transmission/dissemination of special air-reports on volcanic ash, their upload and display on the NM NOP Portal/EVITA Tool and verify number of reports received at NM and VAACs; and
- Test cross-border SIGMET coordination, as it is described in ICAO EUR Doc 014 part 2.5.

3. Exercise VOLCEX17 recommendations

3.1 The meeting was provided presentations by NAV Portugal (Exercise Leader), Eurocontrol Network Manager, VAAC Toulouse, Italy NOF, IATA on behalf of airline operators, and IFALPA. These presentations can be accessed on the ICAO Portal under group name VOLCEXSG → VOLCEX17 dbr VOLCEX18 plan.

3.2 Based on the presentations and meeting input, the meeting agreed to the following recommendations:

- Strictly follow the use of Danger Areas for volcanic ash as described in the EUR/NAT VACP Attachment X4, *Guidance on the Establishment, Amendment and Withdrawal of Danger Areas*;
 - Also, do not publish ‘no fly zones’;
- Modify EVITA;
 - More user friendly in line with work flows being developed by n-Conect user groups;

- Enable colour code impact for airspace and aerodromes;
 - Improve guidance on visualization of airspaces (e.g. select all after entering airspace id);
 - New features desired (re-route proposal, buffer around ash, distance ruler, print, etc...);
 - Continue practicing ATM response considering;
 - Knowledge and further harmonization of SRA approach from States;
 - Non-standard re-route options and opportunities provided by ANSPs promulgated in an efficient manner (e.g. via NM NOP);
 - Provide updates to NM of airspace alleviation and Route Availability Document (RAD) restriction cancellations;
 - Tactical information on airport diversion capability desired;
 - Communications;
 - Conduct preparatory teleconferences for AOs and ANSPs a few weeks before the exercise; and/or
 - Conduct table top exercise focusing on ANSPs and explaining the new merged EUR/NAT VACP well in time before the Exercise;
 - Disseminate special air-reports from AO to ACC to MWO to ROC and VAAC via ICAO AFS (AFTN/AMHS/RODEX, SADIS);
 - Upload special air-reports on volcanic ash on NOP portal/EVITA tool;
 - Replace ALTITUDE with LEVEL (noting users will still have to make filtering and choose whether to enter FL or ALT);
 - Allow call sign box to accept the call sign with 7 characters;
 - Provide wider exposure of special air-reports being reported;
 - Cross check special air-reports uploaded on EVITA with those disseminated through ICAO AFS network derived from simulated voice communication;
 - Promote ANSPs participation (and other non-airline organizations) in exercise and consider specific duties in the next exercise,
 - NOTAM;
 - States should comply to Annex 15 and the merged EUR/NAT VACP in providing NOTAM which points to existing volcanic ash information and does not reproduce the ash cloud dimensions (or concentration of ash);
 - SIGMET
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- Emphasize that cross border coordination guidance is provided in EUR Doc 014 (provide specific references) and expand harmonization (States should coordinate with all their borders);
- Follow SIGMET format (e.g. inclusion of EXERCISE VOLCEXnn EXERCISE at the beginning, and EXERCISE, EXERCISE, EXERCISE at the end of the SIGMET, inclusion of '-' at end of first SIGMET line after ICAO code identifying the MWO and also a carriage return in order to separate the first line of the message to the remaining text);
- Reduce time of exercise to one day in order to focus on a physical meeting of participants a few weeks in advance (note that for Iceland – an eruption can occur on Day 0 and the exercise may begin on Day 1 or beyond when the ash reaches Europe);
- VAAC product improvements;
 - Provide harmonized volcanic ash products between VAACs London and Toulouse as well as between associated MET Offices to cater for the EUR SRA methodology approach;
- Include airports in next exercise.

4. VOLCEX18 planning meeting

4.1 The meeting was chaired by the new Exercise Leader of VOLCEX18, Árni Guðbrandsson of ISAVIA and the Secretary of the meeting was Christopher Keohan of ICAO EUR/NAT Regional Office, Paris.

4.2 VAAC Toulouse provided the meeting an update on VAAC product developments such as the increased resolution of the dispersion model (MOCAGE) from 0.5 to 0.1° which will improve the eruption source information and thus the forecast of volcanic ash. Furthermore, the information related to the vertical profile of the volcanic ash was also expected to be improved. Lastly, VAAC Toulouse will coordinate with VAAC London on harmonizing volcanic ash products.

4.3 The meeting recalled the VOLCEX17 debrief meeting recommendations when formulating the VOLCEX18 objectives as listed below.

- Exercise the merged EUR/NAT Volcanic Ash Contingency Plan (EUR Doc 019, NAT Doc 006, Part II);
 - For individual States: test the effectiveness of their national procedures in accordance with the ICAO plan;
 - For all participants: test the effectiveness of local (organizational) volcanic ash contingency plans and/or procedures; and
 - Exercise the origination, dissemination, reception and use of volcanic ash related aeronautical/meteorological information (including VAA/VAG, VA supplementary information, VA SIGMET and NOTAM and special air-reports on volcanic activity); ensure that NOTAM are in accordance with Annex 15 and the ICAO EUR/NAT Volcanic Ash Contingency Plan;
 - Limit the use of Danger Areas in accordance to the VACP, Attachment X4;

- Conduct workshop on exercise preparation with an emphasis on reviewing the new merged VACP and Exercise Directives (open to everyone – with an emphasis on ANSPs, MWOs, NOFs and National Regulators);
- Exercise and evaluate crisis coordination between the various stakeholders through EACCC (the European Aviation Crisis Coordination Cell) and the Aircraft Operator Crisis Coordination Cell (AOCCC);
- Test the ATM responsiveness to need of AO operational flexibility;
- Test transmission/dissemination of special air-reports on volcanic ash from aircraft via VHF, CPDLC and SATCOM (pre-coordination with operator needed);
 - According to ICAO scheme: AO → ACC → MWO → ROC and VAAC (ICAO AFS: AFTN/AMHS/RODEX, SADIS);
 - Their upload and display on the NM NOP Portal/EVITA Tool; and
 - Verify number of reports received at NM and VAACs;
- Test cross-border SIGMET coordination;
- Test airport readiness in situation with high numbers of stranded passengers due to flight cancellations;
- Test airport diversion capability information distribution (enhanced NM tool plus procedures);

4.4 The Directing Staff (DISTAFF) for VOLCEX18 was determined to be as follows:

Organization	Name	Job Title	E-mail Address	Office Phone Number
EXERCISE LEADER	Iceland Arni GUDBRANDSSON	Senior ATM Expert	arni.gudbrandsson@isavia.is	+354 424 4000 +354 424 5116 +354 891 6464 (mob)
ICAO	Christopher KEOHAN	Regional Officer - MET	ckeohan@paris.icao.int	+33 1 46 41 85 16
ECTL	Kenneth THOMAS	Head of Network Operations Management Coordination	kenneth.thomas@eurocontrol.int	+32 2 729 9792 +32 472 528242 +32 2 729 9028 fax
NM	NM Exercise Team		NM_CRISIS_EXERCISE@eurocontrol.int
VAAC London	Update	VAAC Manager	Update	Update
ANSP	Iceland Arni GUDBRANDSSON	See above		
Regulator	Iceland	Update	Update	Update
NOF	Iceland	Update	Update	Update
MWO	Iceland	Update	Update	Update
IATA	Carlo VERELST	Manager ATM Infrastructure Europe	carlo.verelst@eurocontrol.int verelstc2@iata.org	+32 2 729 97 51

4.5 The meeting also agreed to the following VOLCEX18 attributes and milestones.

Attributes

- Volcano Name: Oraefajokull (volcano no. 374010)
- Location: Iceland
- Eruption time: prior 28 November 2018 (will elaborate in Exercise Directive)
- Duration: 28 November 2018 (Exercise from 0800-1600 UTC)
 - VAAC products issued every 6 hours
 - First operational telcon at 1000 UTC, second operational telcon of day at 1330 UTC
- Plume attributes:

- Beyond day 1 (28 November 18): Issued by VAAC London
- The plume is expected to impact multiple EUR States and the time delay from the eruption to the day of the exercise will be chosen such that there will be a significant impact to EUR

Milestones

- **End of April 2018** – VAAC products available
- **10 Aug 2018** – Initial draft of Exercise Directive available to all the DISTAFF
- **1400 local 6 Sep 2018 to CoB 7 Sep 2018, Paris** – exercise prep workshop, open to everyone, with an emphasis on ANSPs, MWOs, NOFs, and National Regulators
- **29 Sep 2018** – Final VOLCEX18 Exercise Directive available (subject to workshop dates – preferably 2 weeks before the workshop)
- **End-Oct 2018** – first preparatory telcons for Regulators/ANSPs/MWOs/NOFs
- **End-Oct 2018** – second preparatory telcons for AOs
- **28 Nov 2018** – VOLCEX18
- **7 Dec 2018** – individual reports due from participants
- **14 Dec 2018** – consolidated reports due
 - significant findings should be provided in lessons learned and recommendations
- **3rd week Jan 2019** - VOLCEX18 debrief meeting and VOLCEX19 planning meeting, Italy (Naples) (tbc by host)
- **1st week Feb 2019** – VOLCEX18 final report posted on the ICAO EUR/NAT RO website

5. VOLCEX/SG/13

5.1 The meeting agreed to the updated VOLCEX/SG future work programme as provided at **Appendix D**.

6. Any other business

6.1 The meeting thanked Jose Amaral and NAV Portugal for hosting this series of volcanic ash exercise meetings and developing the VOLCEX17 Exercise Directive. The meeting concluded at 1200 on 17 January 2018.

Appendix A

VOLCEX17 Debrief Meeting; VOLCEX18 Planning Meeting and VOLCEX/SG/13 Meeting

16-17 January 2018 (Lisbon, Portugal)

LIST OF PARTICIPANTS

ALBANIA

Arben SANCOLLI

DENMARK

Kim ROSING-ASVID

FRANCE

Charlotte BASQUIN

Ghislaine DELORME

Philippe HEREIL

Patrick SIMON

HUNGARY

Jozsef TOROCSIK

ICELAND

Árni GUÐBRANDSSON

Bjorn Saevar EINARSSON

ITALY

Angelo ROMITO

Santo Giuseppe SGRO'

MOROCCO

Abderrahim MOUHTADI

NETHERLANDS

Rob VAN DER BOOM (tbc)

NORWAY

Line HAMMERLUND

POLAND

Kamil SZCZUKA

PORTUGAL

José AMARAL

Antonio BEJA

Joao DUQUE

Jorge DIAS

Teresa FERREIRA

Helena LAMELAS

Nuno LOPES

José Luiz PEREIRA

ROMANIA

Valentin MAGUREANU

Adrian STEFAN

SPAIN

Ángel ALCÁZAR

José Manuel LÓPEZ

José Luis MOZO GONZÁLEZ

SWEDEN

Eva TINGWALL

Thomas JÖNSSON

UNITED KINGDOM

Krista HAMMOND

UNITED STATES

Travis FIEBELKORN

AIR FRANCE

Loïc ANDRO

AMERICAN AIRLINES

David E. NOBLE

Steve SMITH

AZUL LINHAS AÉREAS BRASILEIRAS

Ricardo VOLCOV CRIVELENTE

Luan LUCENA ALVES

SATA AIR AÇORES

Lucinda Marília BENTO MENDES

TAP

Paulo FERREIRA

Paulo MARQUES

Ana PAIVA

Sara RAMALHO

Vanda RODRIGUES

EUROCONTROL

Kenneth THOMAS

EUROPEAN COMMISSION

Jean-Marc FLON

Appendix A

VOLCEX17 Debrief Meeting; VOLCEX18 Planning Meeting and VOLCEX/SG/13 Meeting

16-17 January 2018 (Lisbon, Portugal)

LIST OF PARTICIPANTS

IATA

Carlo VERELST

ICAO

Chris KEOHAN

IFALPA

Klaus SIEVERS

Appendix B

VOLCEX17 Debrief Meeting; VOLCEX18 Planning Meeting and VOLCEX/SG/13 Meeting

16-17 January 2018 (Lisbon, Portugal)

LIST OF PARTICIPANTS

ALBANIA

Arben SANCOLLI asancolli@albcontrol.al

DENMARK

Kim ROSING-ASVID kiro@tbst.dk

FRANCE

Charlotte BASQUIN charlotte.basquin@aviation-civile.gouv.fr

Ghislaine DELORME ghislaine.delorme@aviation-civile.gouv.fr

Philippe HEREIL philippe.hereil@meteo.fr

Patrick SIMON patrick.simon@meteo.fr

HUNGARY

Jozsef TOROCSIK torocsik.jozsef@nkh.gov.hu

ICELAND

Árni GUÐBRANDSSON arni.gudbrandsson@isavia.is

Bjorn Saevar EINARSSON bjornse@vedur.is

ITALY

Angelo ROMITO a.romito@enac.gov.it

Santo Giuseppe SGRO' santo.sgro@enav.it

MOROCCO

Abderrahim MOUHTADI abderrahim.mouhtadi@gmail.com

NETHERLANDS

Rob VAN DER BOOM (tbc) Rob.vander.Boom@minienm.nl

NORWAY

Line HAMMERLUND Line.Maria.Hammerlund@avinor.no

POLAND

Kamil SZCZUKA Kamil.Szczuka@imgw.pl

PORTUGAL

José AMARAL Jose.Amaral@nav.pt

Antonio BEJA antonio.beja@anac.pt

Joao DUQUE joao.duque@anac.pt

Jorge DIAS Jorge.Dias@nav.pt

Teresa FERREIRA teresa.ferreira@gama.mm.gov.pt

Helena LAMELAS helena.lamelas@gama.mm.gov.pt

Nuno LOPES nuno.lopes@ipma.pt

José Luiz PEREIRA Jose.Pereira@nav.pt

Appendix B

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16-17 January 2018 (Lisbon, Portugal)

LIST OF PARTICIPANTS

ROMANIA

Valentin MAGUREANU valentin.magureanu@romatsa.ro
Adrian STEFAN adrian.stefan@romatsa.ro

SPAIN

Ángel ALCÁZAR aalcazari@aemet.es
José Manuel LÓPEZ
José Luis MOZO GONZÁLEZ jlmozo@seguridadaerea.es

SWEDEN

Eva TINGWALL Eva.Tingwall@transportstyrelsen.se
Thomas JÖNSSON thomas.jonsson@lfv.nuac.eu

UNITED KINGDOM

Krista HAMMOND krista.hammond@metoffice.gov.uk

UNITED STATES

Travis FIEBELKORN travis.fiebelkorn@faa.gov

AIR FRANCE

Loïc ANDRO loandro@airfrance.fr

AMERICAN AIRLINES

David E. NOBLE David.Noble@aa.com
Steve SMITH Stephen.Smith@aa.com

AZUL LINHAS AÉREAS BRASILEIRAS

Ricardo VOLCOV CRIVELENTE ricardo.crivelete@voeazul.com.br
Luan LUCENA ALVES luan.alves@voeazul.com.br

SATA AIR AÇORES

Lucinda Marília BENTO MENDES pdlorsp@sata.pt

TAP

Paulo FERREIRA paferreira@tap.pt
Paulo MARQUES pmmarques@tap.pt
Ana PAIVA apaiva@tap.pt
Sara RAMALHO sramalho@tap.pt
Vanda RODRIGUES vsrodrigues@tap.pt

EUROCONTROL

Kenneth THOMAS kenneth.thomas@eurocontrol.int

EUROPEAN COMMISSION

Jean-Marc FLON Jean-Marc.FLON@ec.europa.eu

Appendix B

VOLCEX17 Debrief Meeting; VOLCEX18 Planning Meeting and VOLCEX/SG/13 Meeting

16-17 January 2018 (Lisbon, Portugal)

LIST OF PARTICIPANTS

IATA

Carlo VERELST

carlo.verelst@eurocontrol.int

ICAO

Chris KEOHAN

ckeohan@paris.icao.int

IFALPA

Klaus SIEVERS

klaus_sievers@web.de

Appendix C - Agenda

EUR/NAT VOLCEX17 DEBRIEF MEETING

16 January 2018

TIVOLI Avenida da Liberdade Hotel – Av. Da Liberdade 185, 1269-050 Lisbon, Portugal

Provisional Agenda

16 January 2018		
Time	Item	Lead
0830	<i>Registration</i>	--
0900	Welcome and opening of the meeting , including: <ul style="list-style-type: none">• Purpose and conduct of the Debrief Meeting; and• Adoption of the provisional agenda.	Secretary
0915	Recapitulation of Exercise VOLCEX17 , including: <ul style="list-style-type: none">• Scenario;• Participating agencies and Directing Staff (DISTAFF); and• Aims and Objectives.	Exercise Leader
0930	Exercise VOLCEX17 lessons learned, recommendations and conclusions: <ul style="list-style-type: none">• Volcanic Ash Advisory Centres;• Meteorological Watch Offices;• Air Navigation Service Providers;	Exercise Leader based on the Initial Exercise Reports submitted
1030	<i>Coffee break</i>	--
1100	Exercise VOLCEX17 lessons learned, recommendations and conclusions: <ul style="list-style-type: none">• International NOTAM Offices;• Aircraft Operators and IATA;	Exercise Leader based on the Initial Exercise Reports submitted
1230	<i>Lunch break</i>	--
1345	Exercise VOLCEX17 lessons learned, recommendations and conclusions: <ul style="list-style-type: none">• National supervisory authorities;• Eurocontrol; and• Others	Exercise Leader based on the Initial Exercise Reports submitted
1500	<i>Coffee break</i>	--

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16 January 2018		
Time	Item	Lead
1530	Key messages arising from Exercise VOLCEX17: Taking into consideration the aims and objectives of Exercise VOLCEX17, and based on the lessons learned, recommendations and conclusions discussed, the meeting will identify those key messages to be put for the consideration, if necessary, by the European and North Atlantic Volcanic Ash Exercises Steering Group (EUR/NAT VOLCEX/SG) or where appropriate, EANPG COG and NAT IMG, particularly in the context of the Volcanic Ash Contingency Plan for the EUR/NAT Region.	Exercise Leader
1630	Any other business	Secretary
1700	Close	--

EUR/NAT VOLCEX18 PLANNING and VOLCEX/SG/13 MEETINGS

17 January 2018

TIVOLI Avenida da Liberdade Hotel – Av. Da Liberdade 185, 1269-050 Lisbon, Portugal

Provisional Agenda

17 January 2018		
Time	Item	Lead
0900	Welcome and opening of the meeting <ul style="list-style-type: none"> • Purpose and conduct of the Planning Meeting; 	Secretary
0915	Review of: <ul style="list-style-type: none"> • status of VAAC developments; 	VAAC Toulouse
1030	<i>Coffee break</i>	--
1045	VOLCEX18 framework (following guidelines provided in Appendix F of Doc 9766 and OPINS), including: <ul style="list-style-type: none"> • Determination of Exercise Leader and Directing Staff; • Participants including States, International Organizations, airlines and other bodies; • Exercise aims and objectives noting changes associated with VACP in EUR and NAT Regions 	Exercise Leader
1230	<i>Lunch break</i>	--
1345	Exercise scenario planning, including: <ul style="list-style-type: none"> • Exercise volcano; • Exercise duration; • Role of VAACs, MWOs, ACCs, Network Manager, MATMC, EACCC, volcano observatory, IATA and airline operators, national supervisory authorities, and other players; • Communications • Exercise Directives; • Initial Exercise Reports; • Exercise Debrief; and • Final Exercise Report 	Exercise Leader
1515	<i>Coffee break</i>	--
1530	Exercise scenario planning (continued) VOLCEX/SG/13 <ul style="list-style-type: none"> • Adapt VOLCEX/SG future work programme; • Any other business 	

-- END --

APPENDIX D – EUR/NAT VOLCEX/SG FUTURE WORK PROGRAMME

Updated 17 January 2018

2018 TO 2020

Date	Activity	Location
29, 30 November 2017	<ul style="list-style-type: none">• VOLCEX17	Volcano in Azores, Portugal (Água de Pau)
16-17 January 2018	<ul style="list-style-type: none">• Debrief meeting for VOLCEX17• Planning meeting for VOLCEX18• VOLCEX/SG/13	Lisbon, Portugal
Nov 2018	<ul style="list-style-type: none">• VOLCEX18	Iceland
Jan 2019	<ul style="list-style-type: none">• Debrief meeting for VOLCEX18• Planning meeting for VOLCEX19• VOLCEX/SG/14	Italy (Naples)
Autumn 2019	<ul style="list-style-type: none">• VOLCEX19	Vesuvio
Late 2019/early 2020	<ul style="list-style-type: none">• Debrief meeting for VOLCEX19• Planning meeting for VOLCEX20• VOLCEX/SG/15	Italy (Rome)
Autumn 2020	<ul style="list-style-type: none">• VOLCEX20	Iceland

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