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# Flight operations in Iceland during the Eyjafjallajökull volcanic eruption in 2010

Atlantic Conference on Eyjafjallajökull and Aviation

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# Introduction



- Calendar of events 14 - 29 April
- The Regulator's role in the line of events
- The situation in Iceland and the effect on:
  - Air transport to and from Iceland
  - Domestic operations
- Future thoughts

# Calendar of events in April



12/04/2010 - 30/04/2010

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
April 12	13	14	15	16	17	18
		Volcanic eruption starts		Meeting invitation for a Eurocontrol Teleconference next Monday		
19	20	21	22	23	24	25
- Eurocontrol Teleconf. - Ministers meeting -ICAO NAT-SPG teleconf.		New arrangements endorsed in Europe  NAT-SPG teleconference		Req. From Icelandic operators to endorse the European decision in Icel.	Safety data developed and presented	New arrangements accepted by ICAA -AIC to Airline operators
First period of airspace closure over BIKF, operations moved to BIAR						
26	27	28	29	30	May 1	2
New arrangements published						
First period of airspace closure over BIKF, operations moved to BIAR						

# ICAA's (regulator) Role/View



- AOC, ANSP & Airport operators procedures need to be approved by the Regulator
- Safety related changes need to be approved
  - Safety Case, Risk assessment
  - Evidence that the change will not compromise safety and will not lead to unexpected hazards
- Conservative - Reluctance to change a already functioning system
  - Flexibility in a crisis situation

# International Airports in Iceland



# Akureyri Airport



15.9.2010

# Air Navigation Services



- NAT Contingency plan in effect
  - VAAC -> IMO, ANSP, Information provided
  - No IFR clearance into ash contaminated area
- Changed to European model in the domestic airspace
  - Black area: “no-fly Zone” with 60NM buffer
    - 15NM buffer within domestic airspace
  - Read area: Where volcanic ash may be encountered
    - IFR Clearance, if certain conditions for operators are met
  - NAT Contingency plan in other sectors

# Airline operators



- No IFR clearance in contaminated airspace
  - VFR flights
- When No-Fly zone established
  - Operators put forward evidence from manufacturers, changed procedures
  - High impact on Domestic and General Aviation
    - No-Fly zone where VFR was allowed before
    - High tourist attraction which could not be met

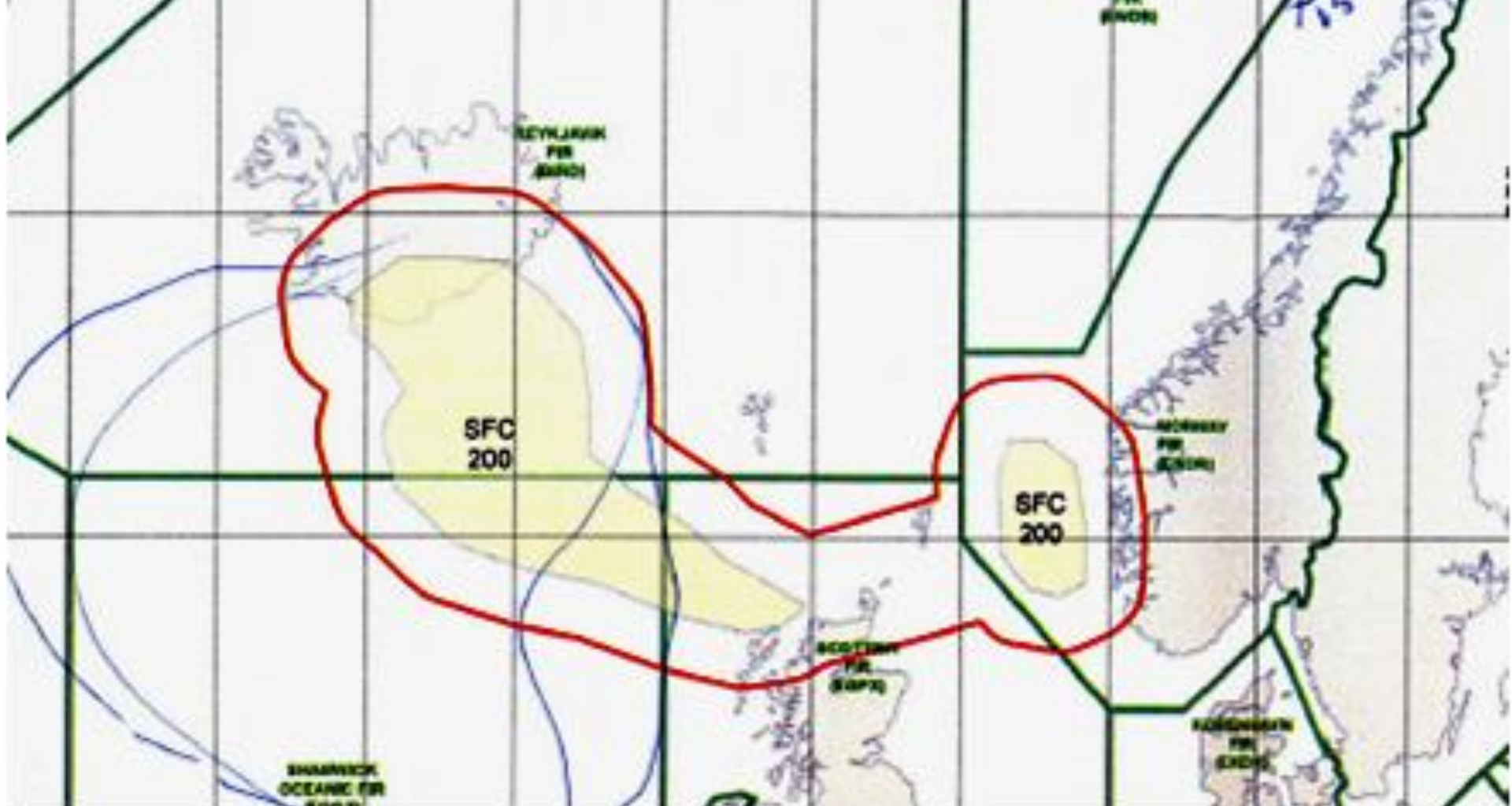
# Two examples



15.9.2010

# Air ash concentration chart with buffer from FL000 to FL200

Valid at 0600UTC 22/04/2010






# Modelled Ash Concentration from FL000 to FL200 at 1800 UTC 08/05/2010


Issue time: 201005081200


## Met Office

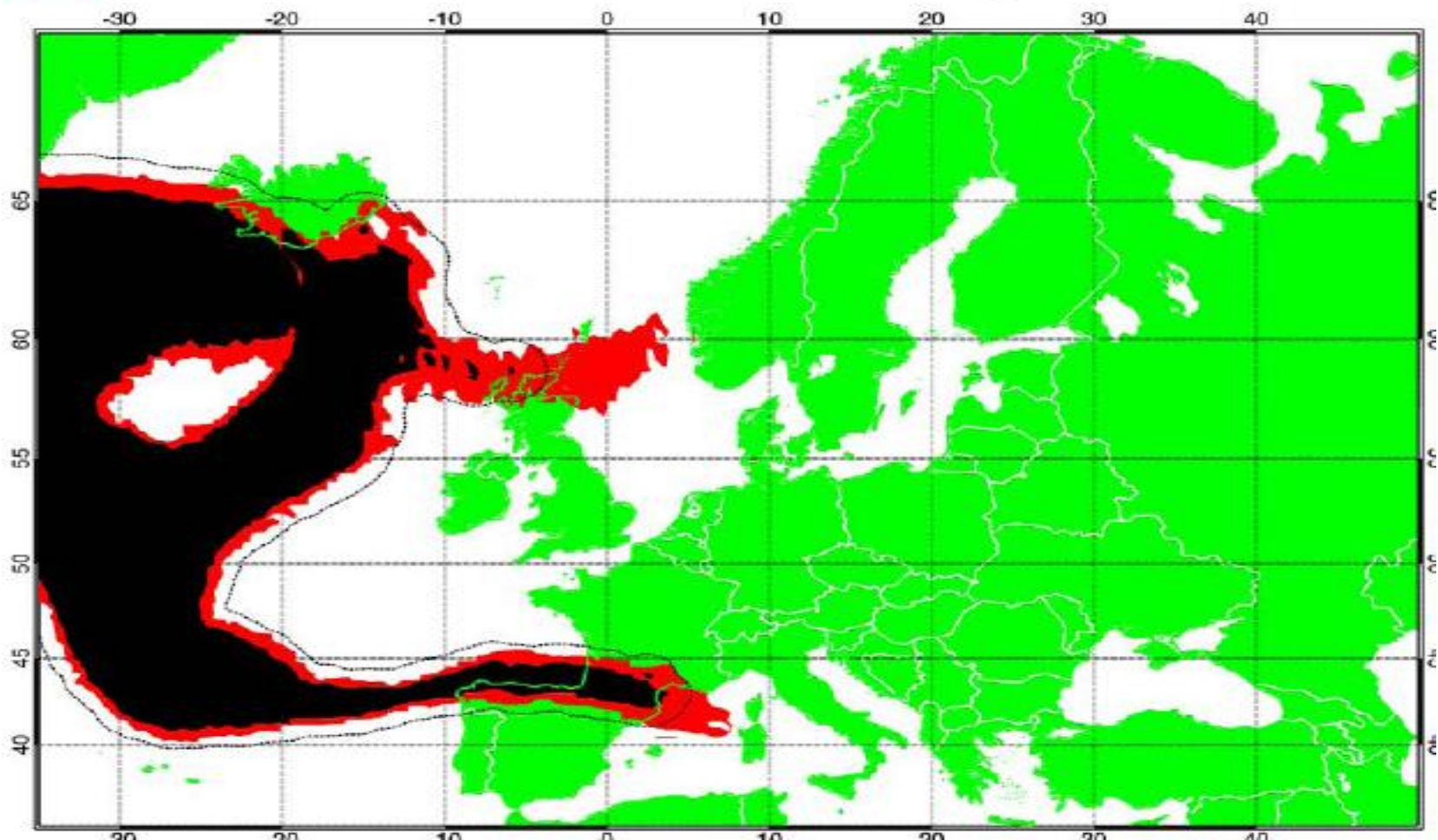
This is a guidance product generated from model data and is supplemental to the official VAAC London Volcanic Ash Advisory and Volcanic Ash Graphic products.

60 NM bufer zone is automatically generated. Please refer to national NOTAMS for definitive boundaries of No-Fly Zone areas.

 Predicted area where volcanic ash may be encountered

 Predicted area of ash concentrations that exceed acceptable engine manufacturer tolerance levels

 Predicted area of ash concentrations that exceed engine manufacturer tolerance levels, plus 60NM buffer



# Future thoughts



- Accepted measurements
  - Used to improve the model and determine actual ash concentration around airports
- General principles might not be suitable in the vicinity of the Volcano
  - Should states have the flexibility to adjust local conditions
  - One size does not fit all
- ANSPs to develop procedures so that measurements can be used in the operational decision making process
- Safety Case → Regulators Accept