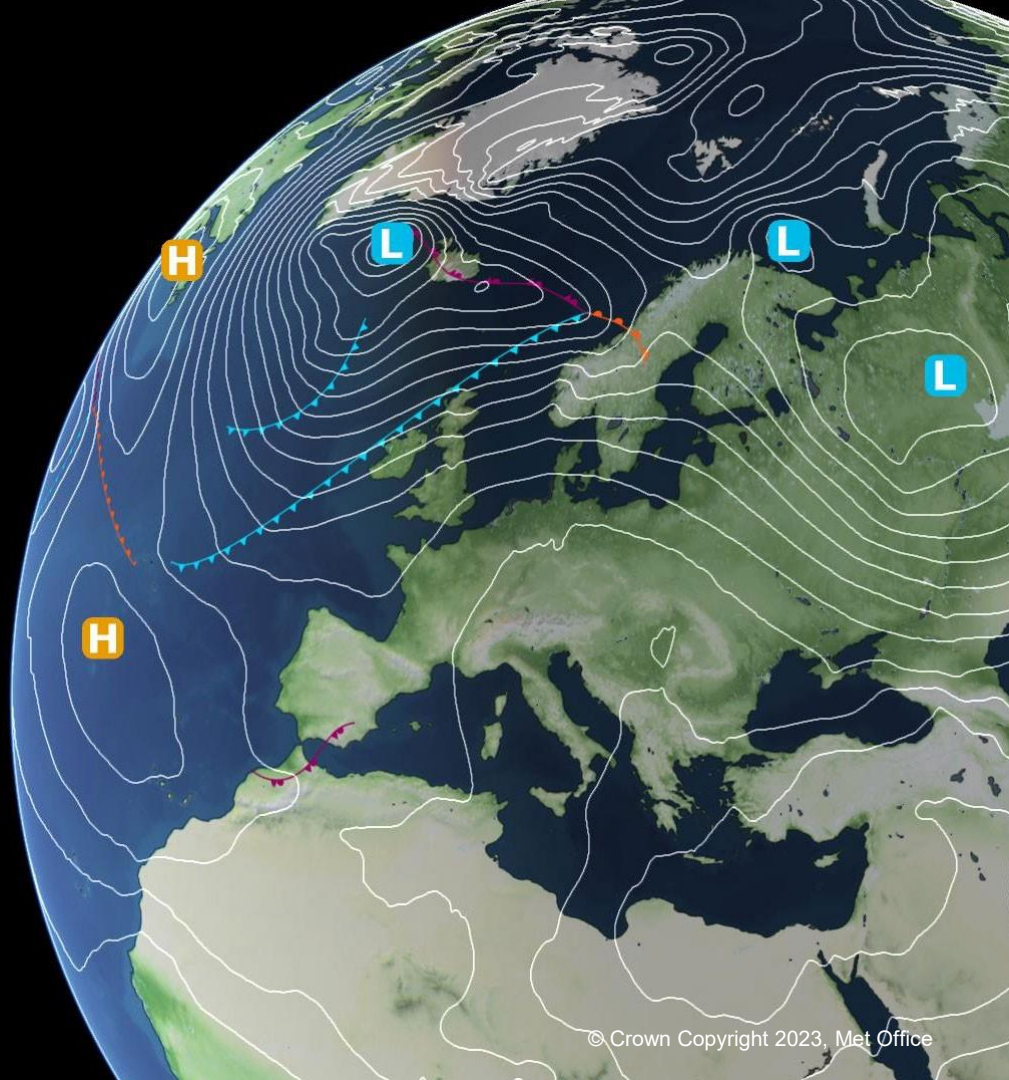
Accessing QVA Data



Karen Shorey – VAAC London

The 9 Volcanic Ash advisory centres have agreed to use a common approach for getting QVA data to users.

Key principles:

- Must adhere to ICAO requirements for “System Wide Information Management (SWIM)”
- To use a common API framework - the Open Geospatial Consortium (OGC) Environmental Data Retrieval (EDR) API standard
- Provide data using the same formats Each VAAC provides data via their own API (the two US VAAC’s will be combined onto one).

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- Data in the API is organised into collections
  - Gridded deterministic data
  - Gridded probabilistic data (for four concentration thresholds)
  - QVACI features (polygons with attributes)

- The API can publish data for multiple volcanoes, with the most recently published data set for each volcano available for download.

- There will also be a notifications service which announces when new data is published.

The VAAC London QVA API is in development right now. It will be:

- SWIM compliant in accordance with ICAO and EUROCONTROL requirements.
- Listed in the EUROCONTROL SWIM registry https://eur-registry.swim.aero/services once operational
- Available for airlines, air navigation service providers and organisations supporting aviation to use.

Expected to become operational in early June 2025.

Notifications system

- A message publishing system which announces when new data sets are published. It will include the volcano number, VAAC name, and exercise/live status.
- It will use the OGC-EDR “Publish - subscribe” specification
- A “heartbeat” message so users can ensure the system is working and they are properly connected

This shows what a notifications message will look like.

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Requesting data

- The API contains sets of metadata that tell you about the API and the data available
- Information on:
  - API provider and support information
  - Standards the API conforms to
  - The available collections/locations, as well as temporal and vertical information for the data itself

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Requesting data

- Requests take the following form:

There is also one for ‘vaac-london-qva-products’

https://gateway.api-management.metoffice.cloud/vaac-london-qva-gridded-data/1.0/collections/:collectionId/locations/:locationId

Name of the specific collection, e.g. ‘qva_deterministic’, ‘qva_probabilistic’ or ‘qvaci_iwxxm’

6-digit volcano number

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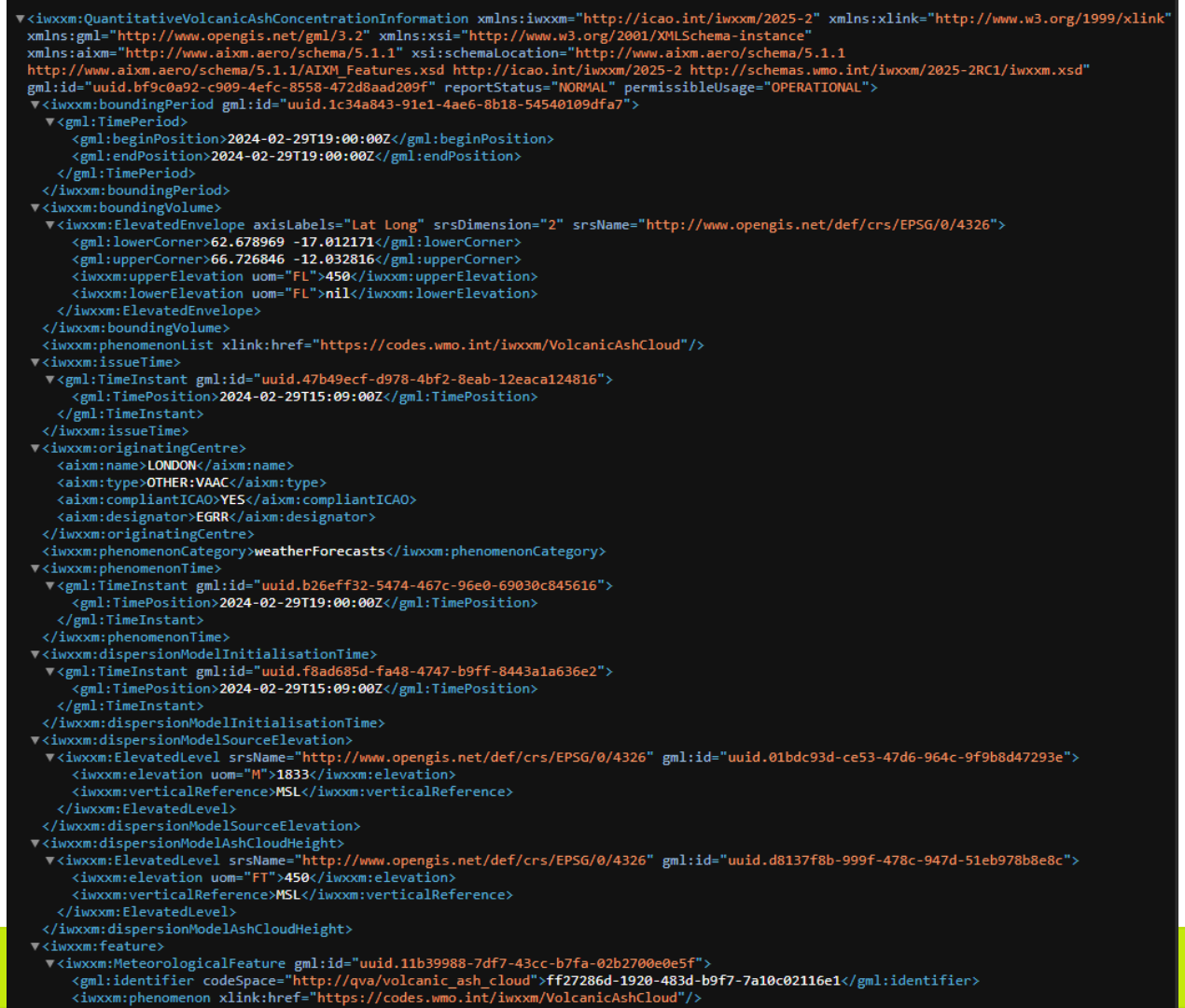
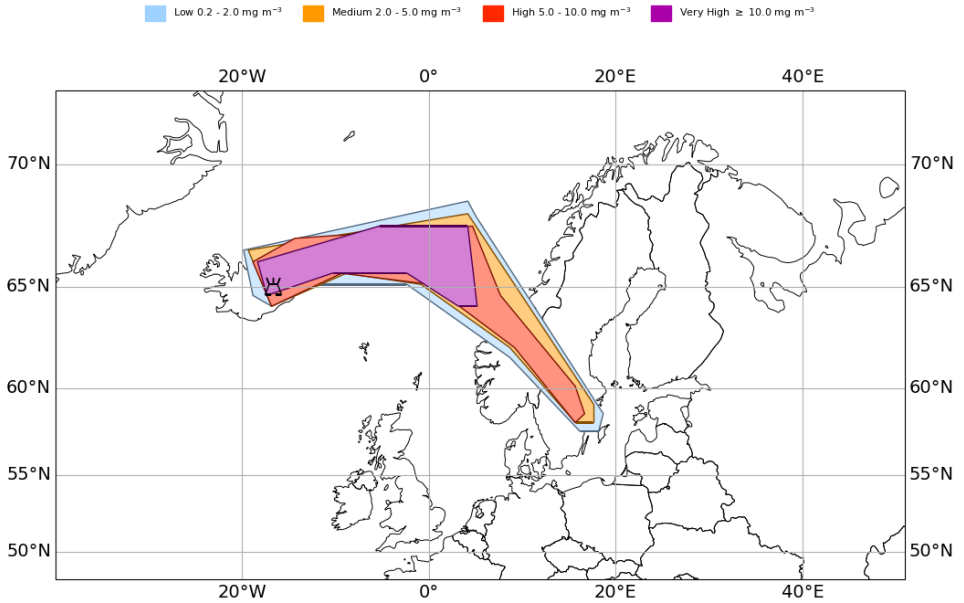
Demonstration



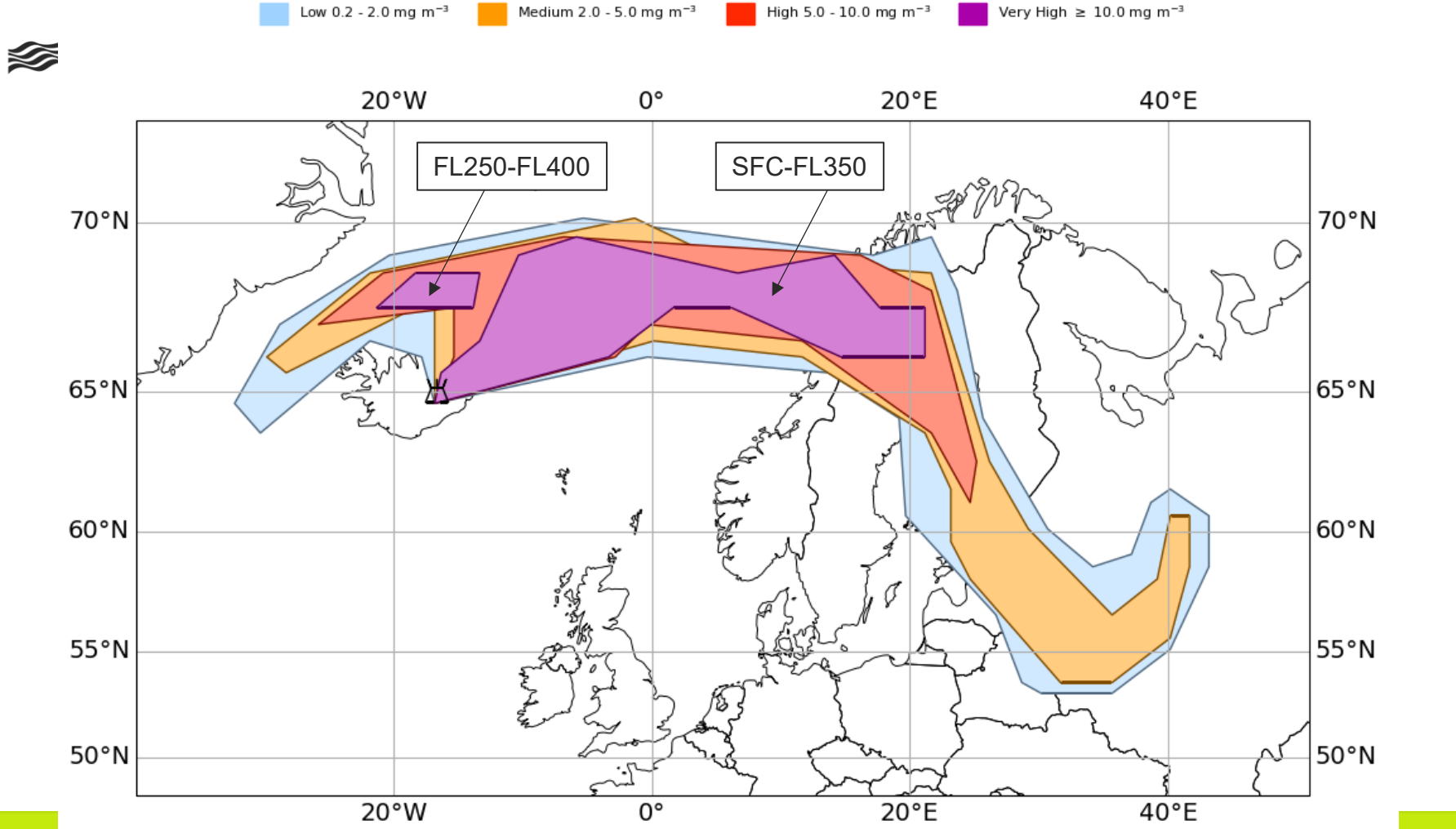
QVACI feature data comes in IWXXM format

What is IWXXM? A specific World Meteorological Organisation (WMO) designed format (on behalf of ICAO). For QVACI it describes the polygons in which the ash concentration exceeds the four thresholds



Each polygon will have metadata describing the “base” and “top” of the ash in that polygon.

Designed for general situational awareness. Could be overlaid onto WAFS SIGWX charts.


Low 0.2 - 2.0 mg m⁻³
Medium 2.0 - 5.0 mg m⁻³
High 5.0 - 10.0 mg m⁻³
Very High ≥ 10.0 mg m⁻³
FL250-FL400
SFC-FL350
20°W
0°
20°E
40°E
70°N
65°N
60°N
55°N
50°N

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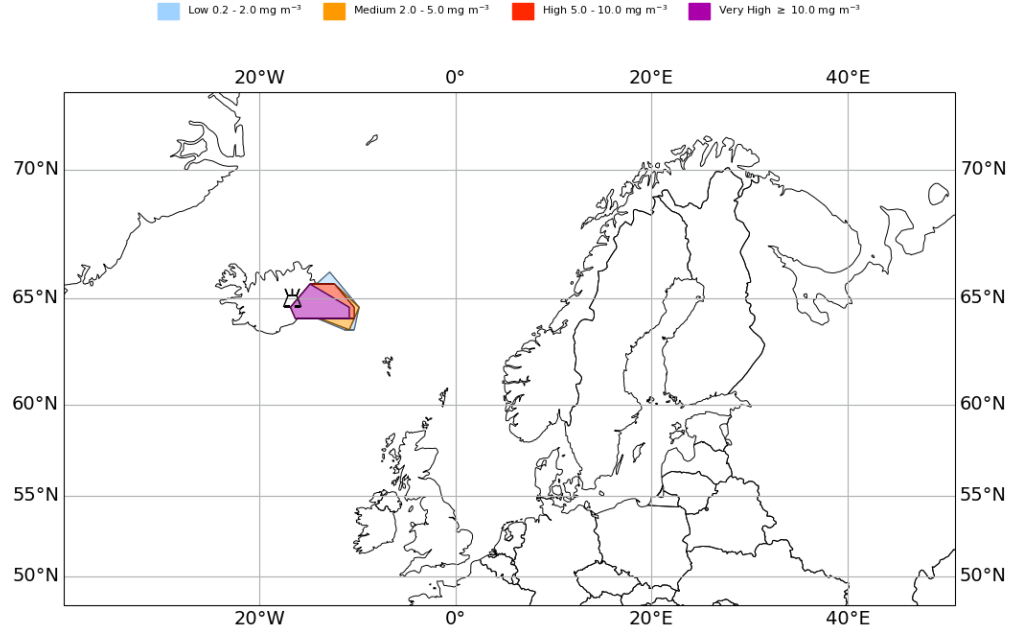
Modelled Ash Concentration
From FL000 to FL600
For KVERKFJOLL
Valid at 1500 UTC 22/10/2024

This chart displays QVA compliant concentration data from VAAC London

Issue Time: 1500 UTC 22 Oct 2024

TEST TEST TEST



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Availability

- VAAC London QVA API expected to become operational in early June 2025
- Regular exercise data sets will be published to enable API users to get their systems set up.

- API Information and registration instructions will be added to our webpages in due course. https://www.metoffice.gov.uk/services/transport/aviation/regulated/international-aviation/vaac/index

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