How volcanic ash data are prepared for InaSAFE Realtime

"In this module we will explain how volcanic ash fall data are taken from PVMBG volcanic ash fall products and prepared for use in InaSAFE Realtime."

In the volcanic ash service we provide a file upload form that PVMBG can use to push modelled volcanic ash products for a volcanic eruption event. Once an ash dataset has been uploaded, InaSAFE will add appropriate keywords to the uploaded dataset and generate a number of products. This process is described in the diagram below. The various products are combined with standard exposure and contextual datasets to produce a report. The report is then published on the InaSAFE realtime web site but is not pushed to InaWARE.
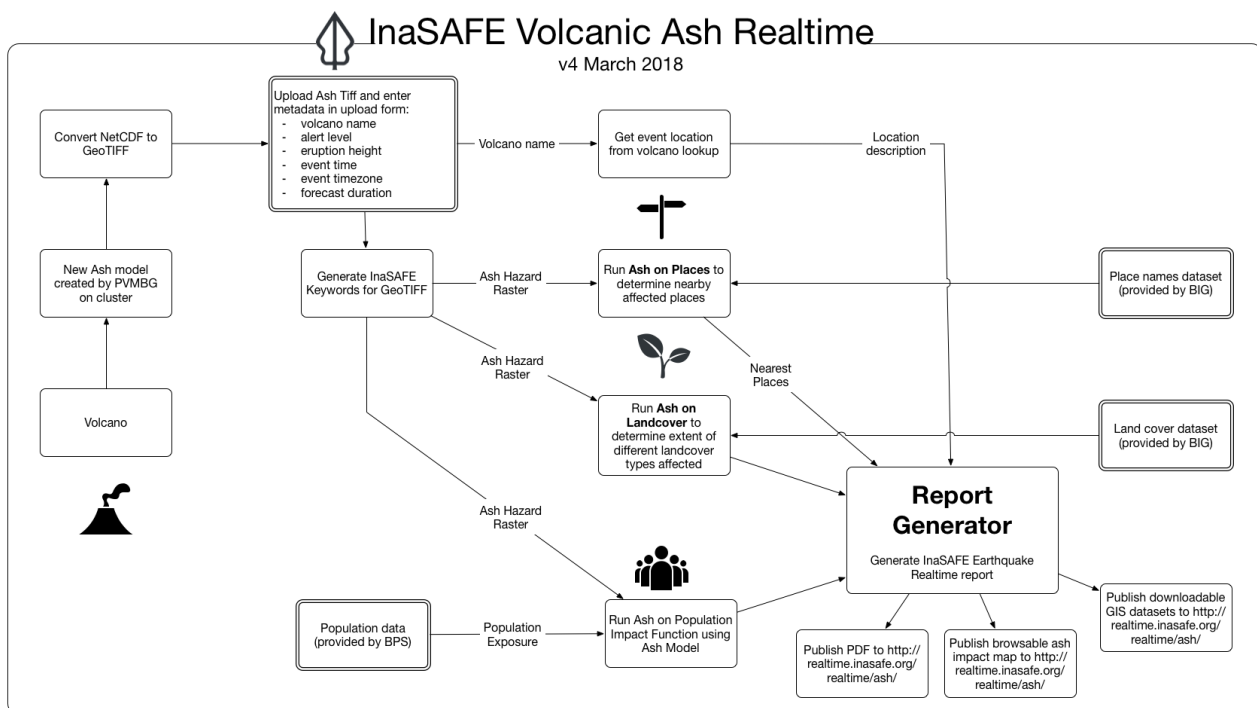
You try:

Goal: To understand the process of running a volcanic ash realtime analysis

Upload a volcanic ash fall model using the sample data provided with this worksheet and applying metadata from the table. You can use the metadata as a guideline and try your own variations instead if you like.

You will have to obtain a username and password from the instructor to enable you to upload data. Normally only staff from PVMBG perform this task. If this is not possible then the instructore will demonstrate this to the class.

Check your results
Did the file upload without any error messages?

Did the analysis run successfully? (Wait till the next module to find out how to see the results if you can't find them)

Name	Expectation
Server unless otherwise specified	http:// testing.realtime.inasafe.org
Volcano name	Semeru
Alert level	any
Eruption height	realistic values are between 0 and 10000
Event time the time the model is uploaded will be detected automatically	the time the eruption took place
Event time zone not necessarily your time zone. It must be an unambigous standard timezone definition.	e.g. Asia/Jakarta
Forecast duration How long do you want the result to be valid for before it expires? The amount of ash erupting the the weather conditions make this a temporary product.	1 or 3

More about

As you can see from the diagram, there are three main analyses carried out in the ash analysis:

1) Calculation of ash on landcover. The deposit of volcanic ash on certain landcover classes is significant because the ash can kill crops and affect other land use related activities. For landcover, data from BIG is used. This calculation is used to produce the Land Cover Impact table in the PDF report.

2) Calculation of ash on places: This calculation is carried out using BIG places data and Open Airports data. InaSAFE does not make any assertions as to whether a place or airport will be operable given the ash load experienced. Rather InaSAFE estimates the effect of the modelled ash fallout level at ground level at a given place / airport, and tabulates the place name, number of people likely affected and the fallout level.

3) Calculation of ash on population: In this calculation, the number of people per ash fallout level is calculated for the reported event.

After the analysis has completed and the reports are generated, the report and data are made available on the realtime platform. In the future it would be possible to publish the report to InaWARE where it can be viewed by operations staff after the volcanic eruption.

✔ Check your knowledge:

1. InaSAFE Realtime volcanic ash is available for general use:
    a. True
    b. False

2. Mark all the correct statements:
    a. Ash Realtime actually performs four InaSAFE impact functions during report creation.
    b. InaSAFE ash reports are not available immediately after an ash plume is emitted by a volcano since the ash spread and weight need to be modelled first.
    c. InaSAFE ash reports are based on modelled ash fall at ground level and can be used to plan mitigation activities.
    d. The ash fall reports also include pyroclastic flow reporting.

🔲 Further reading:

• Main repository for InaSAFE Realtime Source Code: https://github.com/inasafe/inasafe-django
• InaSAFE Issue tracker containing detailed design notes during creation of the ash reporting functionality: https://github.com/inasafe/inasafe/issues/2491

Download the sample data for the lesson from http://changelog.inasafe.org/media/images/lesson/worksheet/external_data/670589d4447fbf9d0cc2a9b10f8a8a0280d54a23.tif.