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| **Pilot Name:** Volcano **Objective or sub-objective:** B (Supersites) |
| **February 2015** | **PI or PoC**: Mike Poland, Simona Zoffoli, Freysteinn Sigmundsson, Giuseppe Puglisi | **Collaborating organisations**: USGS, ASI, University of Iceland, INGV |
| **Achievements:** • Produced numerous interferograms in support of research efforts associated with Supersites in Hawaii, Iceland, and Italy |
| **Activities**: Objective B of the Volcano pilot is to coordinate with the GSNL initiative to promote research into how volcanoes work in Hawaii, Iceland, and Italy. This objective takes advantage of the fact that all three locations have already been classified as Supersites, with their own data quotas and research teams. Work is being done primarily by USGS (Hawaii), University of Iceland (Iceland), University of Leeds (U.K.), and INGV (Italy), with support from a large number of investigators that receive Supersite data.We downloaded the first data for the pilot in August, 2014 from RSAT2 and circulated preliminary analysis revealing new ground deformation at Cordón Caulle (Chile) in September 2014. Additional results from other volcanoes in South America followed quickly. These results have been presented widely by CEOS and at scientific conferences, and have been communicated to local volcano observatories for use in hazards assessment and mitigation. The first data from CSK arrived in September 2014, and from TSX in November 2014. Results from those data have been similarly useful and widely shared. |
| **Data accessed this Q** (#images /satellite):As this is the first report, please see column to the right. | **Total data accessed to date** (#images /satellite):See status reports from individual Supersites  |
| **Products** (delivered this quarter): Interferograms and models of earthquake and magmatic deformation | **User** (by product):USGS Hawaiian Volcano Observatory; Icelandic Civil Protection authorities, Icelandic Meteorological Office; INGV – Osservatorio Vesuviano; INGV – Osservatorio Etneo [all users receive all products] | **User or practitioner endorsement/opinion/outcomes**All three volcano Supersites have experienced (in the past year) hazardous volcanic activity. Supersite-provided data have been critical to studying the mechanisms behind such activity. The GNSL assured that these data were acquired and sent to end users. |
| **List any publications directly stemming from pilot work**:A large number of publications and conference presentations have utilized GSNL-provided data; a comprehensive list is available in the status reports for individual Supersites. Highlights include:Pinel, V., Poland, M.P. and Hooper, A., 2014, Volcanology: Lessons learned from synthetic aperture radar imagery. Journal of Volcanology and Geothermal Research, 289, 81-113, doi:10.1016/j.jvolgeores.2014.10.010.Sigmundsson, F., et al., 2014, Segmented lateral dyke growth in a rifting event at Bardarbunga volcanic system, Iceland. Nature, 517(7533), 191-195, doi:10.1038/nature14111.Chen, J., Zebker, H.A., Segall, P. and Miklius, A., 2014. The 2010 slow slip event and secular motion at Kilauea, Hawai`I inferred from TerraSAR-X InSAR data. Journal of Geophysical Research, 119(8): 6667–6683, doi:10.1002/2014JB011156.Lundgren, P., Poland, M., Miklius, A., Orr, T., Yun, S.-H., Fielding, E., Liu, Z., Tanaka, A., Szeliga, W., Hensley, S. and Owen, S., 2013. Evolution of dike opening during the March 2011 Kamoamoa fissure eruption, Kīlauea Volcano, Hawaiʻi. Journal of Geophysical Research, 118(3): 897-914, doi:10.1002/jgrb.50108. |
| **List objective milestones and state progress to date (%)**2014: Continue to acquire data from multiple platforms over volcanoes in Hawaii, Iceland, and Italy. Present results at conferences and in peer-reviewed publications. (100%)2015: Continue to acquire data from multiple platforms over volcanoes in Hawaii, Iceland, and Italy. Present results at conferences and in peer-reviewed publications. (10%)2016: Continue to acquire data from multiple platforms over volcanoes in Hawaii, Iceland, and Italy. Present results at conferences and in peer-reviewed publications. (0%) |
| **Issues identified and risk management approach**:• In some cases, coordination is poor between Supersite participants. This is particularly true in Hawaii, where there is no overarching research program in which the Supersite data are incorporated. Iceland (FutureVolc) and Italy (MED-SUV) are better coordinated in this regard.• The vast majority of data used in Supersite research thus far is SAR, and there has been little integration between SAR and thermal/visual datasets. This should be addressed to achieve the best synergy between complementary EO data. |