A Smartphone Application for Earthquakes That Matter!

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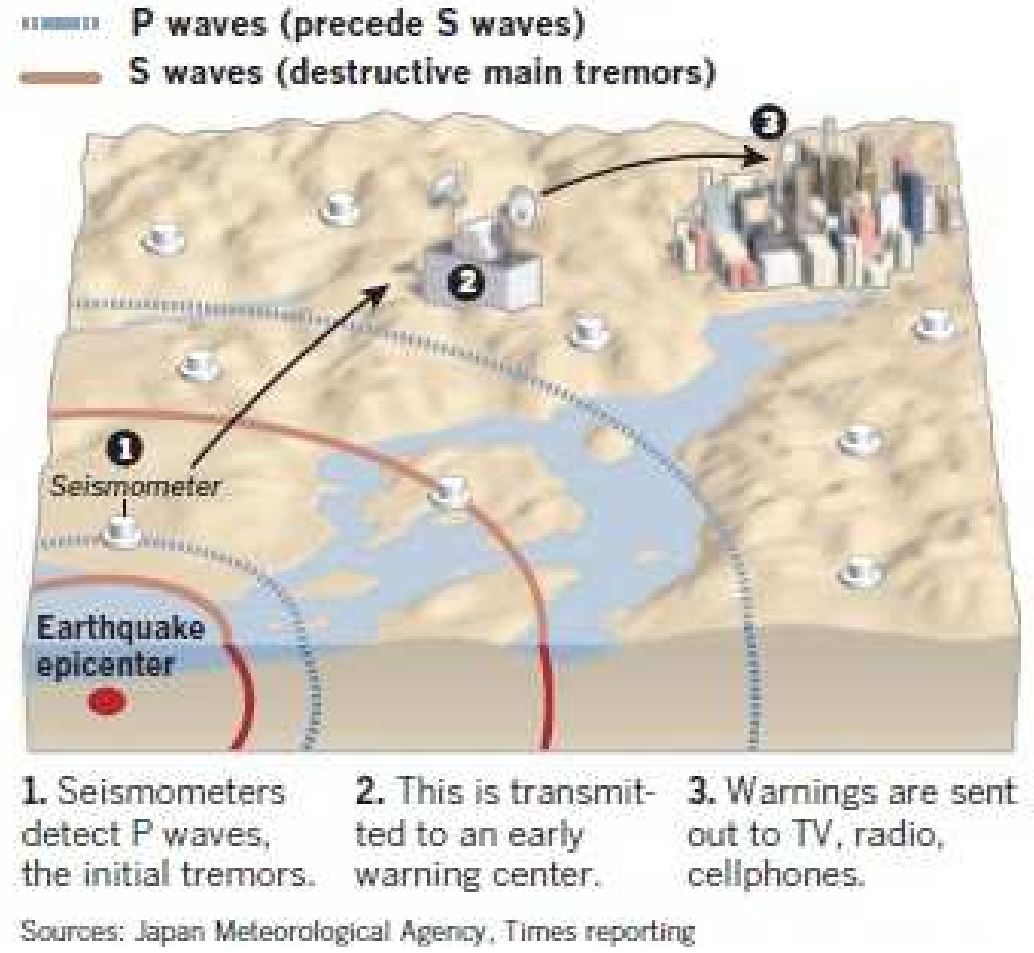
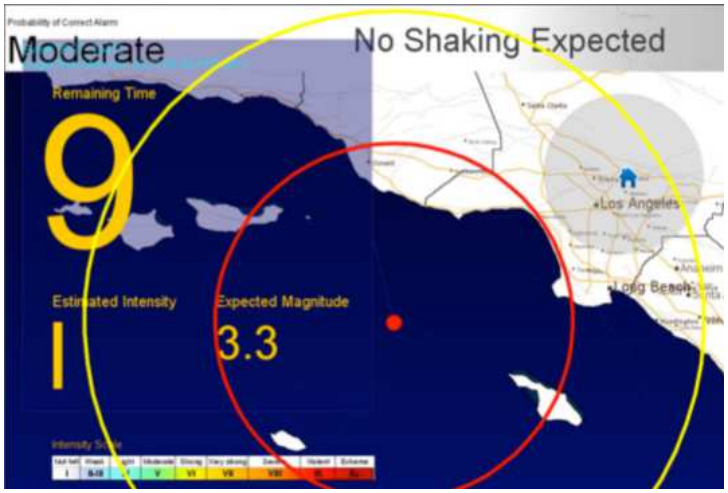
www.emsc-csem.org

www.citizenseismology.eu

Apps for Public: Japan Earthquake Early Warning

- An efficient & unique system (local systems in Mexico, Romania, Turkey)
- Best in high hazard countries
- Unlikely to be generalised in the short term



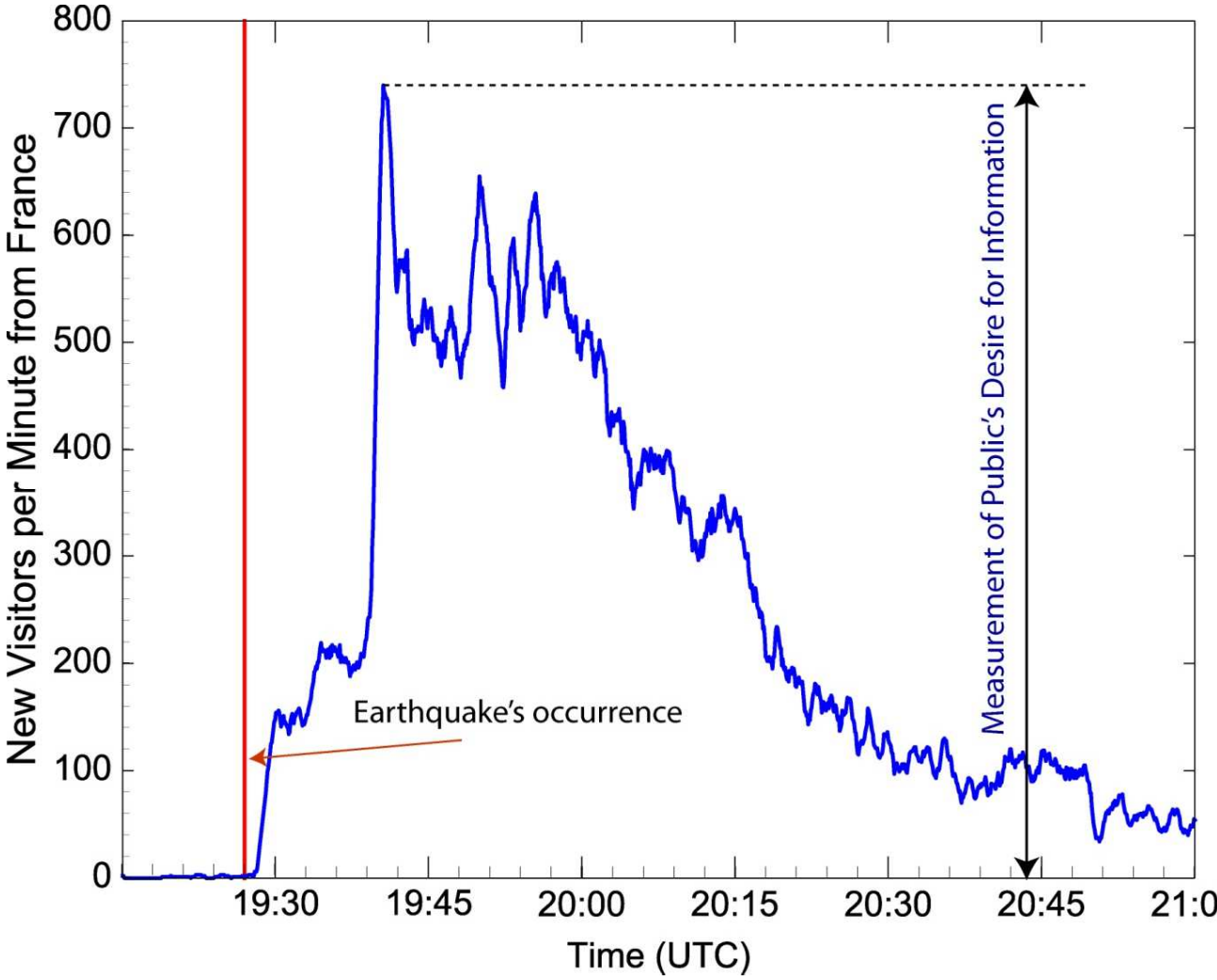


Existing Apps: Reporting Earthquakes

- Report earthquakes
- Filters: Mag & loc.
- 37 000 to 40 000 earthquakes reported annually by EMSC
- **Estimated number of felt & damaging quakes:**
  - **2 000 to 4 000 a year**

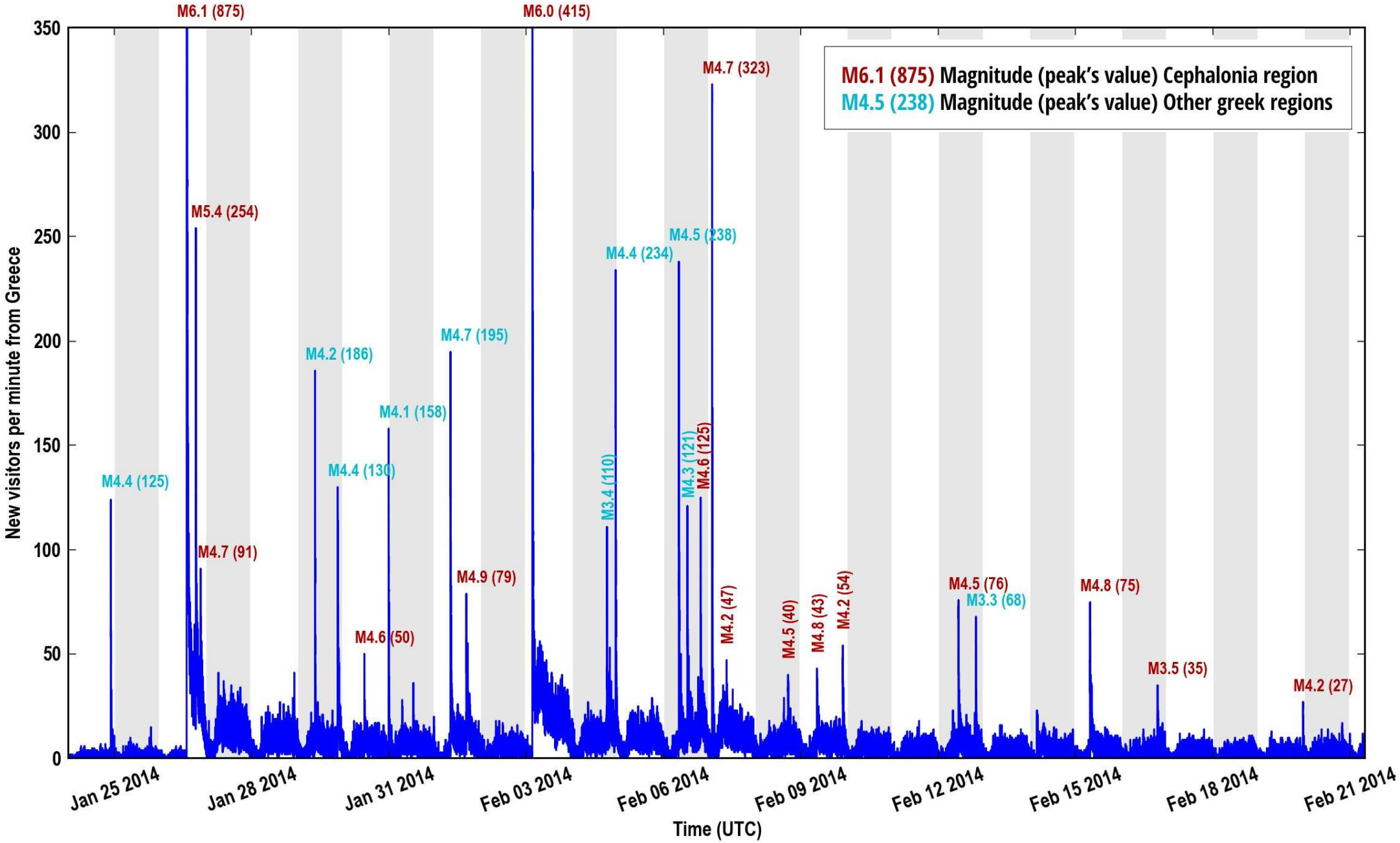
Shaking is Key, not the Magnitude!

- Massive convergence of eyewitnesses on EMSC website
- Looking for information within tens of sec
- So fast that traffic used to locate M5.8 Virginia epicentre in 2 min with 30 km accuracy (Bossu et al., SRL, 2014)
- *Flashsourcing* method



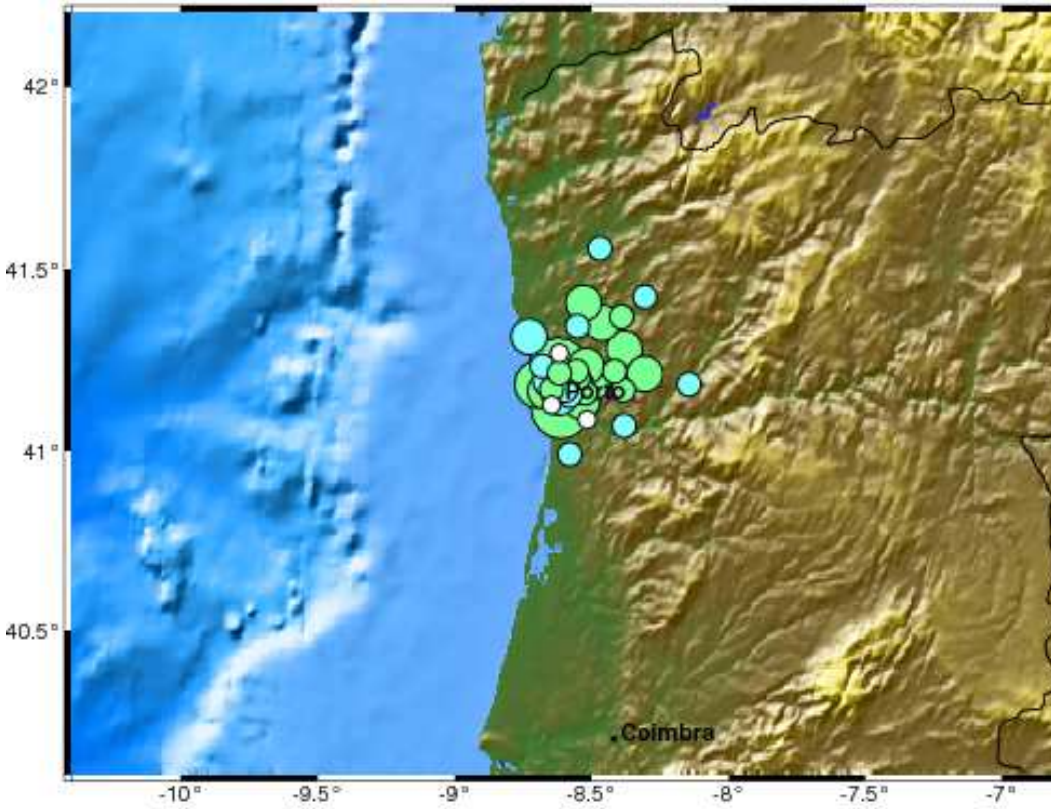
M4.9, April 7th, 2014 Barcelonnette (France)

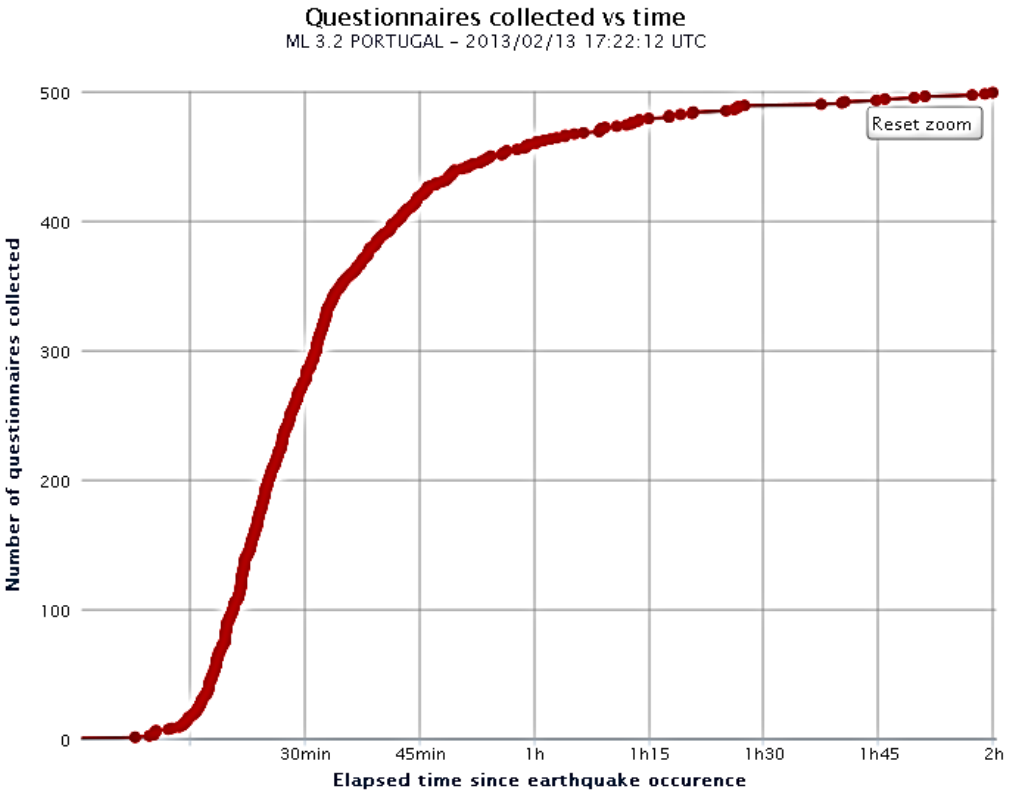
EMSC web traffic related to the widely felt earthquakes in Greece - 2014-01-24 to 2014-02-18

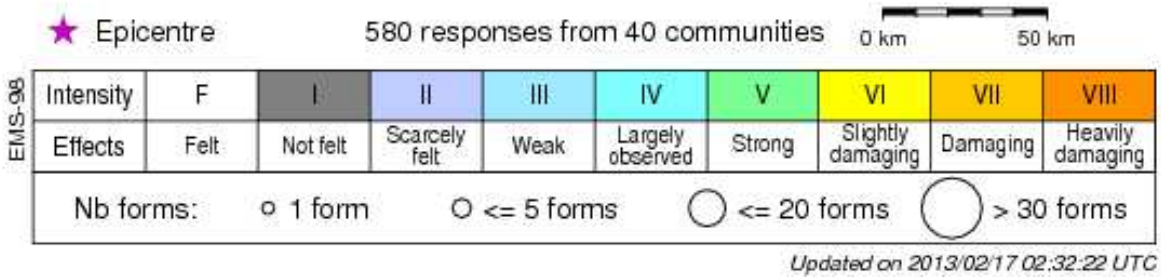


Crowdsourced info: Questionnaires in 32 languages

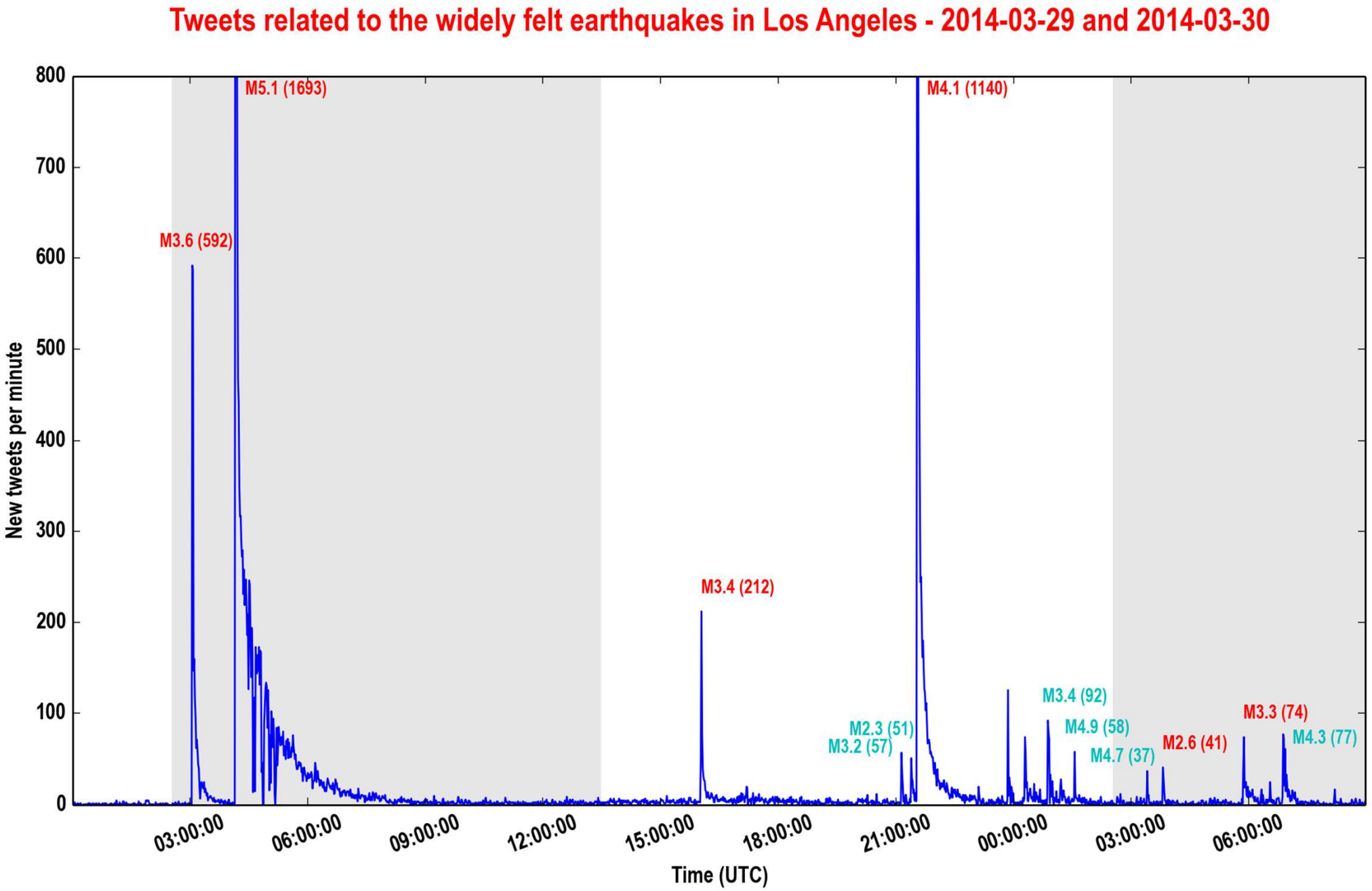
- M3.2 Feb. 13, 2013 Porto: Small in size but of local societal importance



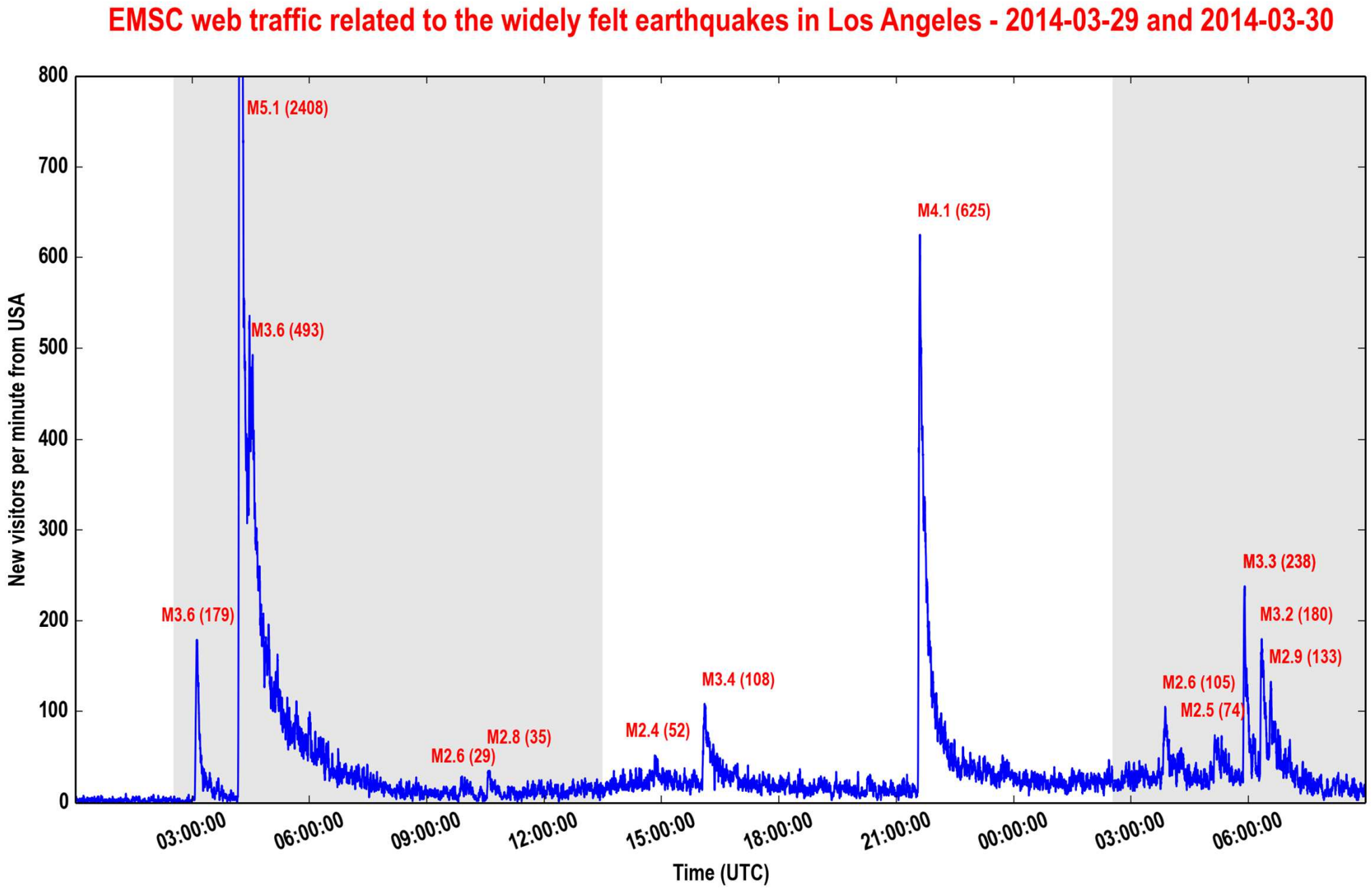




Twitter Earthquake Detection (USGS)

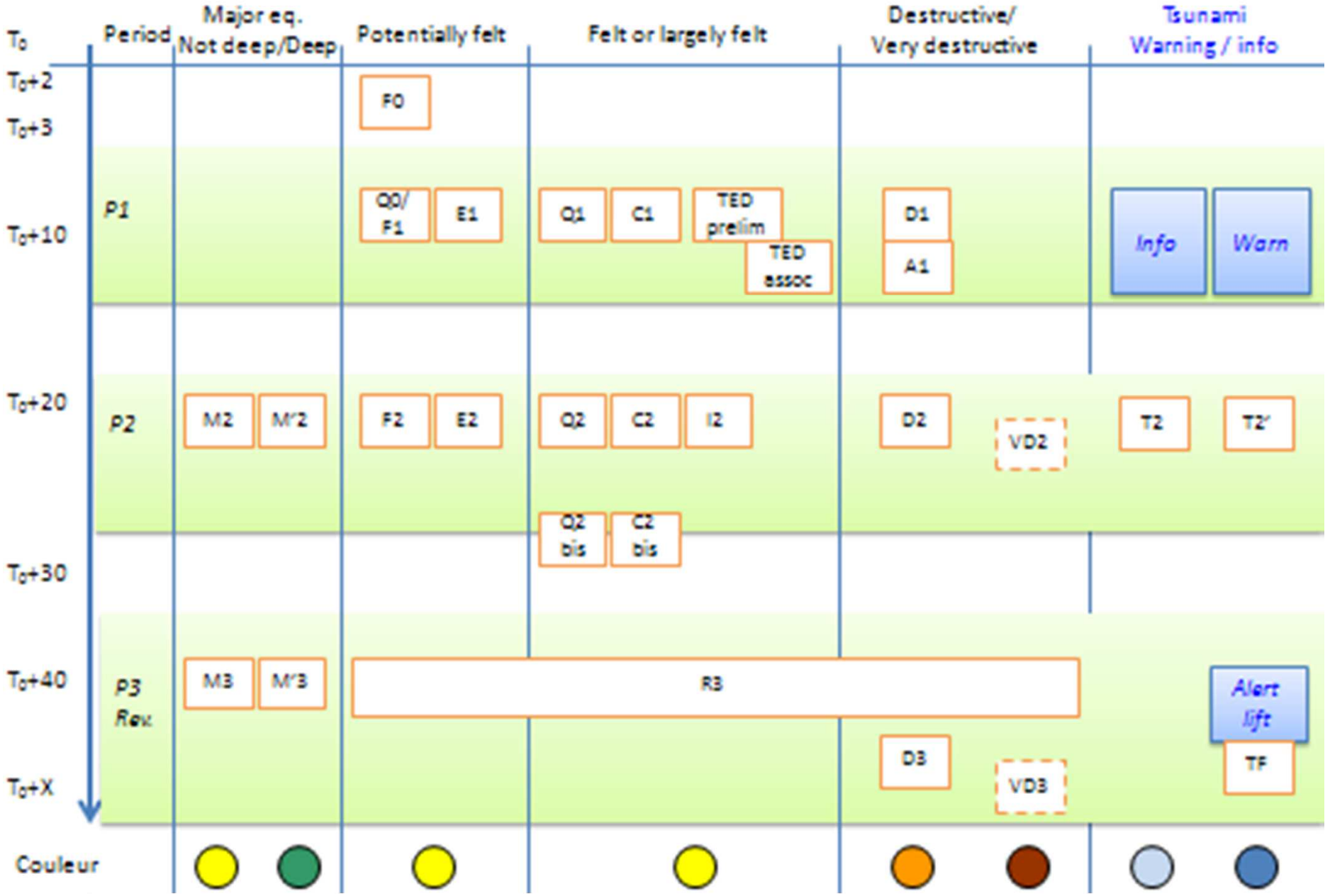


Complementarity Flashsourcing & TED



Philippines M7.1, Oct. 13 2013: EQIA & 27 pics

Discrimination of Significant Earthquakes



twitter

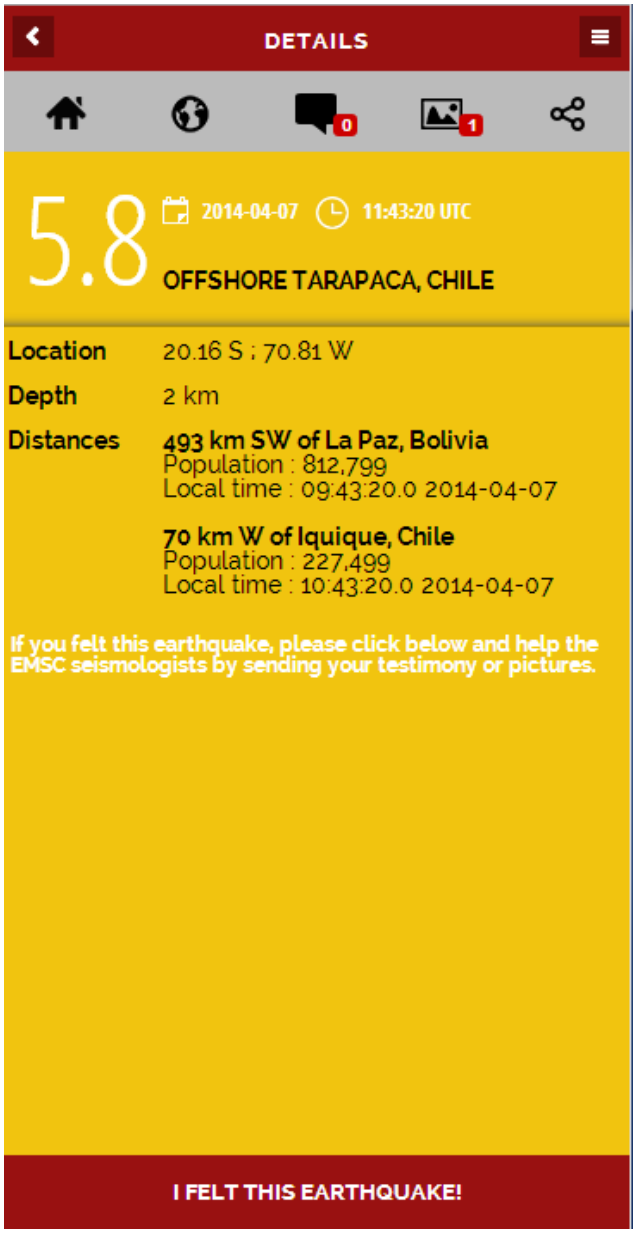
@LastQuake

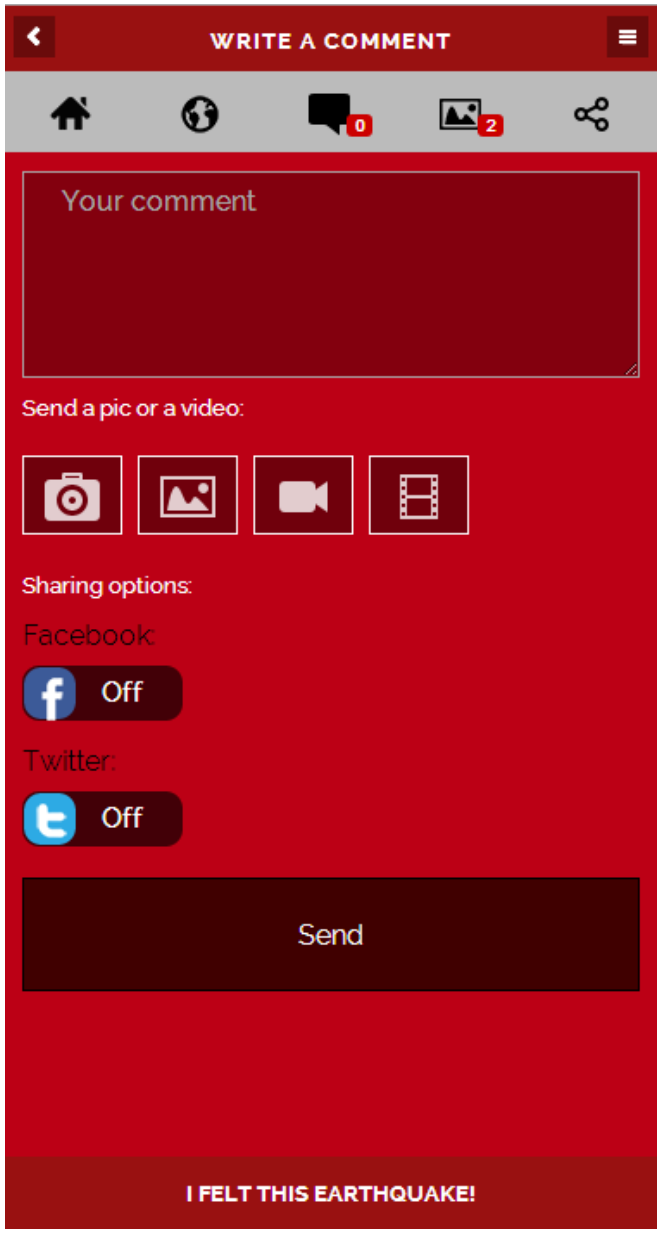
The Application Itself

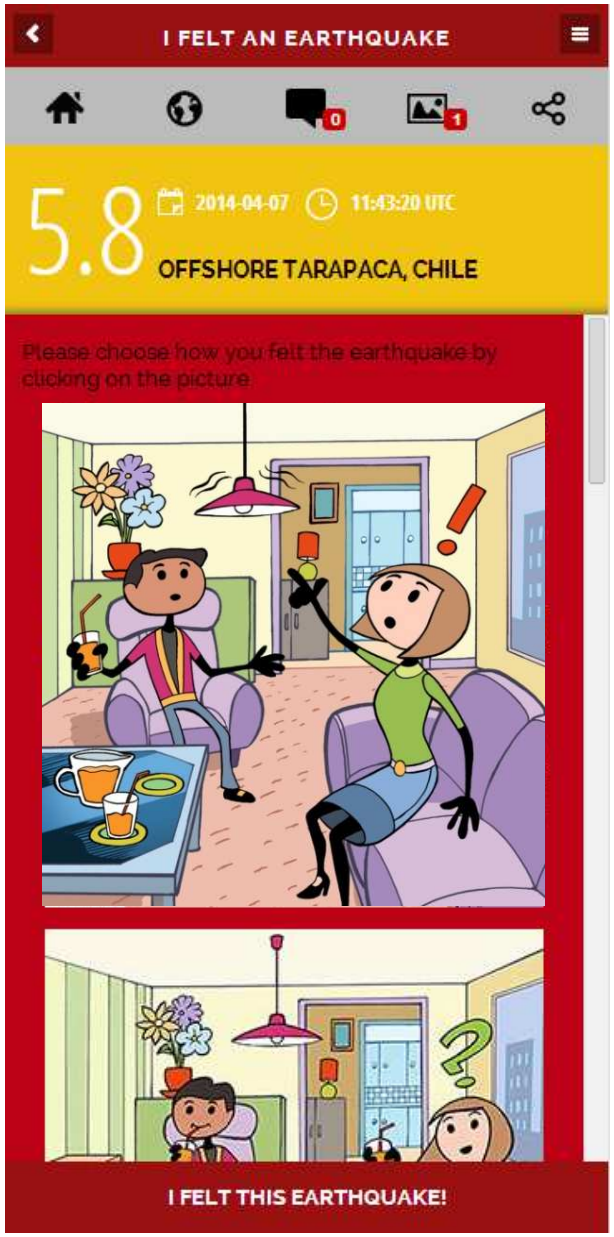
- Near me
  - All quakes around me
- Significant
  - All felt, tsunamigenic or damaging earthquakes
- All
  - Full list of recorded earthquakes

- Notifications:
  - For significant earthquakes only
  - Depends on mag and distance
  - Numbers not to exceed a few tens/yr

Improving Services & Data Collection







Where are we now?

- Crowdfunding launched autumn 2013
- Support from Fondation MAIF
- Pool of beta testers identified
- April 2014: under tests at EMSC
- May 2014: Android app to be shared with beta testers
- June 2014: official release (hopefully!)

Concluding Remarks

- Innovative app to deliver risk information rather than hazard information
  - Focus on the 5% of recorded earthquakes that are felt!

- Targeting general public and authorities

- Aims at optimising collection of eyewitnesses' observations

(poster "the key role of eyewitnesses in rapid earthquake impact assessment")

  - Understand public expectations
  - Answer their needs
  - and in turn, further improve the delivered services