ROVER for End-to-End Seismic Risk Management

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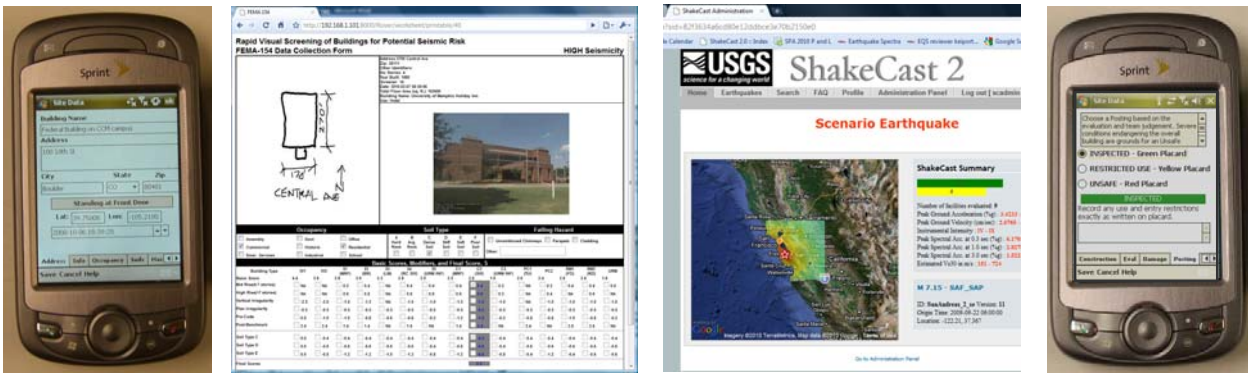
FEMA's Rapid Observation of Vulnerability and Estimation of Risk (*ROVER*) system is mobile software for cities, building owners, and others to perform and manage pre- and post-earthquake field inspection of buildings for potential seismic risk. It automates the de facto international standard paper-based pre- and post-earthquake safety inspection procedures of FEMA 154's *Rapid Visual Screening of Buildings for Potential Seismic Risk* and ATC-20's *Procedures for Postearthquake Safety Evaluation of Buildings*. To the paper-based procedures, ROVER adds several features:

- Collect data on Windows Mobile smartphone; no transcribing paper forms (no phone service needed)
- Secure database on user's own Windows or Linux PC; optional secure hosted service planned
- Free; no licensing costs; planned helpdesk and user community wiki
- Digital photos with captions and watermarking of building information (lat/lon, date/time, name…)
- Digital freehand sketches of building layout
- Latitude & longitude using Bluetooth GPS—more accurate and easier than geocoding street addresses
- Site-specific soil, hazard, & risk using USGS hazard and soil maps
- Optional seismic monitoring with USGS's free *ShakeCast* software
- Optional safety-tag-color estimates within minutes of earthquake from *ShakeCast*
- Optionally exports to FEMA *HAZUS-MH Advanced Engineering Building Module* for risk analysis
- Optionally imports user's pre-existing building data. Just gather field data for the missing pieces.
- FEMA 154 pre-earthquake inspection data can speed up ATC-20 post-earthquake inspections
- Administrator can optionally remotely assign building inspections for real-time process control
- User can remotely report inspections at will (requires phone and data plan or visit to wifi hotspot)
- Remote secure access to server for real-time assistance with inspections, from anywhere in the world
- 1-click installation of downloadable mobile software and of server software
- Onboard help to assist in identifying structure types
- Open source code (C#, .Net, Python) for ongoing community-driven enhancement



Left to right: *ROVER*'s field unit is used to collect pre-earthquake building risk information. Upload data to user's own web-accessible secure server or a local PC. Optionally import it *ShakeCast* for continuous seismic monitoring, or to HAZUS-MH for risk assessment (not shown). Use the field unit to record the post-earthquake safety assessments. Sync field inspections at will for continuous process monitoring.

ROVER was designed by SPA Risk LLC, Instrumental Software Technologies, Inc., and the Applied Technology Council, for the Federal Emergency Management Agency. *ShakeCast* was developed by the US Geological Survey. For more information, call +1 (626) 233-9758, or contact keith@cohen-porter.net.