RAPID: Aerial Imaging and Ground-based Surveys for Post-Disaster Assessment of Areas Affected by Hurricane Sandy

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This Rapid Response Research (RAPID) grant provides funding to collect aerial and ground-based data to assess damage on electric power-lines caused by Hurricane Sandy. The hurricane affected millions of people living along the east coast of United States and was responsible for the loss of more than 100 lives. In addition, 7.5 million power-outages were reported and two weeks after the hurricane, thousands of people were still reported without power. The proposed research will investigate a combination of different close-range airborne and terrestrial techniques to perform rapid condition assessment of critical civil infrastructures (e.g., power lines) and identify potential hazards (e.g., severely weakened trees) after a major natural disaster. The novelty of this research resides in: 1) the investigation of high-quality aerial images captured from manned/unmanned systems, and 2) the development of novel methods for the analysis of both aerial and ground-based data.

The proposed research will have a positive impact on our society by enhancing public safety through effective early assessment of critical infrastructures that will enable planning and implementation of remedial measures in the aftermath of natural disasters. It is envisioned that the proposed work will significantly advance scientific and engineering knowledge in the area of post disaster assessment of electric power lines, and will further enhance our ability to react and intervene after major natural disasters targeting critical infrastructures.