

**This Is Only a Drill: In California, Testing Technology in a Disaster Response**  
**New York Times (08/28/06) P. C1; J. Markoff**

In an effort to modernize emergency-response tools, groups from the Pentagon, nongovernmental organizations, and dozens of technology companies participated in a five-day simulation to test their latest digital disaster-response tools. Dubbed Strong Angel III, the training effort brought together more than 800 military officers, first responders, and experts in wireless networking from technology companies such as Google and Microsoft. "My view is that the value of Strong Angel is 70% in the social networks that will be created," said E. Rasmussen, a Navy surgeon who organized the conference. "What we do is try to bring people with disparate backgrounds together and ensure that they are forced to enter into a conversation." The participants began by constructing a makeshift command center in a vacant building near the San Diego airport. The effort to create a state-of-the-art ad hoc wireless network that could route satellite map coordinates, video images, and other data failed to get off the ground, and the network jammed with an overload of bandwidth-intensive applications. There were some notable successes, however, such as the work of several companies to enable sharing of a set of data digital satellite maps based on a Microsoft technology called Simple Sharing Extensions. The technology, which was built on industry standards such as RSS, was used to overlay on the maps event data relayed by emergency workers from across the San Diego area. Bringing together rivals like Google and Microsoft to collaborate on projects such as the satellite-image mapping application was at the core of Rasmussen's vision for the event, he said.

**When TCP Breaks: Delay- and Disruption-Tolerant Networking**  
**Internet Computing (08/06) Vol. 10, No. 4, P. 72; S. Farrell; V. Vinny; D. Geraghty**

There are research groups devising delay- and disruption-tolerant networking protocols for those scenarios where standard Internet protocols are insufficient to compensate for such interruptions. The Internet Research Task Force's (IRTF) Delay-Tolerant Networking Research Group (DTNRG) is working on a pair of protocols--the Bundle Protocol and the Licklider Transmission Protocol (LTP)--and this work is overlapping with projects from the Defense Advanced Research Projects Agency (DARPA) on disruption-tolerant networking (DTN) and the interplanetary networking (IPN) group. The Bundle Protocol, an overlay network store-and-forward protocol, can piggyback on the current Internet protocol suite and packages a unit of applications data as well as any necessary control information; the bundle is then forwarded by nodes along a path comprised of several intermediate machines that can each store it for substantial periods. The LTP protocol is a point-to-point protocol that is both delay- and disruption-tolerant, employing a communications daemon to handle all disruptive events. Though LTP can be used in other contexts, it is chiefly designed to serve as a potential convergence layer to support the Bundle Protocol. Other potentially relevant DTN protocols include the carrier-pigeon IP protocol. The largest missing ingredient in a viable DTN scheme is reliable routing, but hopes are high that commercial DTN applications are on the horizon.