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Satellites Systems and Emergency Response **William Hreha, Space Systems/Loral**

Wherever you are on the earth a satellite can provide a communications link. The most proliferated coverages provide mobile, broadcast, or Fixed Satellite Services. The most inhabitable land masses are covered by more than one satellite system providing an assurance that the capacity is available when called upon.

In emergency situations communication channels are stressed either due to the service being interrupted or due to increased demand. Satellite operators, satellite service providers, and equipment providers immediately respond to fill the emergency response communication needs. During a disaster satellites support governments, non-governmental organizations, network service providers, media, telecommunication operators, and humanitarian efforts. In Haiti satellite operators such as Echostar and Intelsat immediately made additional communication links available. Service providers deploy fly-away terminals, VSAT equipment (Modems and dishes), and satellite phones to the disaster location and link them to the bandwidth and network capacity reserved.

Satellite technologies have evolved to the point that users can expect high quality communications. Bandwidth on demand is provided over many satellite architectures. These consumer driven services provide high data rates, good quality of service, and low cost points. Techniques to overcome issues with delay are currently implemented in the user device and at the hub. As a measure VoIP calls over satellite are provided at a quality indistinguishable from terrestrial cellular.

There are logistical issues with providing services to disaster areas, but there is not an absence of necessary types of equipment. For example, providing communications to victims is efficient if the victim can use the communication device they already have and are familiar with. While VSATs cannot replace/replicate cell towers, there are portable cell systems that connect to VSATs. The effectiveness of the implementation is driven by the timing required to call up and deploy these technologies where needed.

Satellite systems should be strategically embedded in a community's infrastructure before a disaster so that they are in place and in use when a disaster occurs. Having satellite systems in place as part of the infrastructure prior to a disaster reduces response time and saves lives. With service performance and pricing available today, the opportunity to use satellite services on a daily basis should be reconsidered.