

Appendix 1: Overview of Technologies Extracted from *Survey concerning Disaster Prevention and Mitigation Technologies*

Before a Disaster: Prevention and Prediction	
Disaster	Technology Overview
Natural Disasters in General	Systems to help plan and implement disaster prevention drills
	Systems to support preparation of effective business continuity plans that conform to international standards
	Technologies to quantitatively evaluate damage from various natural disasters
Earthquakes	Technologies to improve seismic resistance of houses, buildings, bridges, tunnels, and other structures through reinforcement or vibration control devices
	Equipment and materials with superior antiseismic performance
	Nonflammable equipment and materials, and fire-resistant construction technologies
	Technologies to reinforce building foundations using steel equipment and materials, and to make soils more resistant to liquefaction by injecting chemicals or air
	Technologies to diagnose the levels of corrosion, degradation, and deterioration of roads, tunnels, and other structures
	Technologies to simulate earthquake damage to buildings and structures
Storms and Floods	Long-life seawalls that can be built in shorter time frames and that make considerations for surrounding scenery
	Technologies to accurately measure river levels, winds, and rainfall
	Systems to continuously monitor land shifting on inclines, assess landslide risk, and issue warnings
	Technologies to simulate damage that may result from river flooding, tsunamis, and landslides
After a Disaster: Response and Recovery	
Natural Disasters in General	Electronic devices that can make robust connections to telephone networks and the Internet immediately following a disaster
	Personal protective equipment to protect people from fires, chemicals, bacteria, and dust
	Self-contained power generators to supply power in emergencies
	Technologies using high-performance sensors to acquire a wide range of disaster information
	Robots that can be remotely operated to ascertain the conditions of, and provide rescue efforts to, affected areas
	Technologies to decontaminate and clean water and farmland contaminated from a disaster
	Temporary bridges that can quickly be assembled on-site where existing bridges have collapsed
	Cloud-based data protection services

	Systems to gather information on road conditions following a disaster, control traffic flows, and help prioritize road reconstruction
	Systems to collect damage, evacuation, and people safety information, and disseminate that information over the Internet
	Devices and systems to quickly identify people in need of rescue and efficiently prioritize rescue opportunities
	Systems to safely and efficiently reconnect essential utilities
	Systems to help people rebuild their lives through disaster victim ledgers
	Comprehensive disaster response systems using technologies to predict imminent disasters and disseminate necessary information
Earthquakes	Systems that can pump a large volume of water over long periods of time to subdue large-scale fires from a significant distance
	Systems to instantly evaluate building safety following an earthquake
	Systems to monitor submarine earthquakes and tsunamis
Storms and Floods	Technologies to prevent building flooding and urgently pump out water during torrential rain or when levees are breached
Volcanic Eruptions	Volcanic gas removal systems
	Technologies to prepare volcano disaster prevention plans using volcanic activity history and simulations, and technologies to monitor falling volcanic ash during an eruption