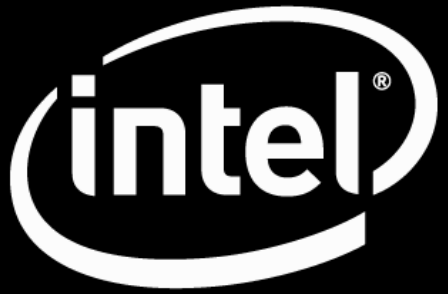


DISASTER MANAGEMENT
Information Technology that Saves Lives

Moderator: Keri Carkeek, Intel Corporation

SEPTEMBER 2011

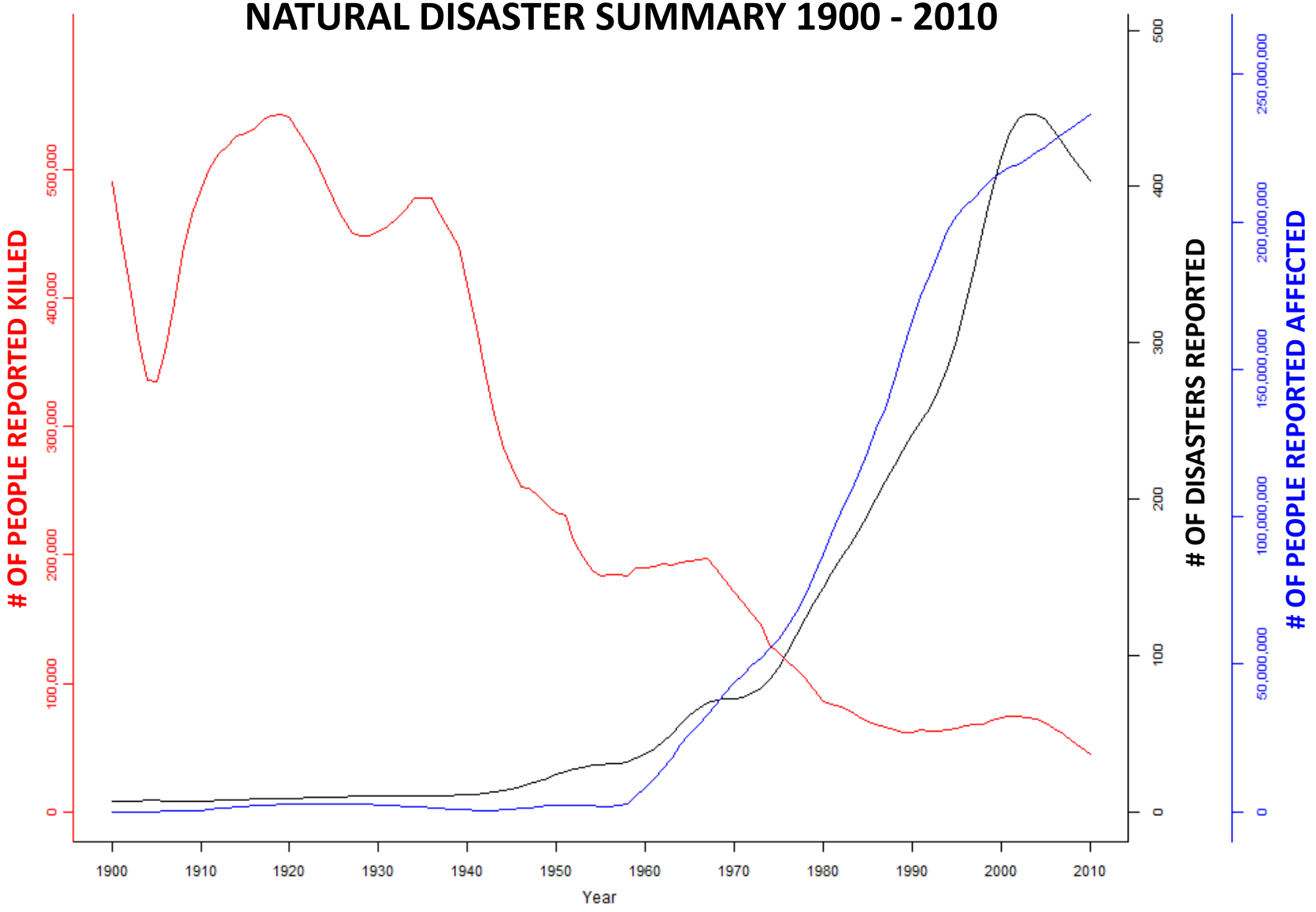
WELCOME TO IDF DAY ZERO 2011

10:00am – 11:30am	Natural Disaster Management Presentation
11:30am – 11:45pm	Summary & Q&A's
11:45pm – 2:00pm	Lunch & Technology Showcase

WHY IS THIS TOPIC IMPORTANT?

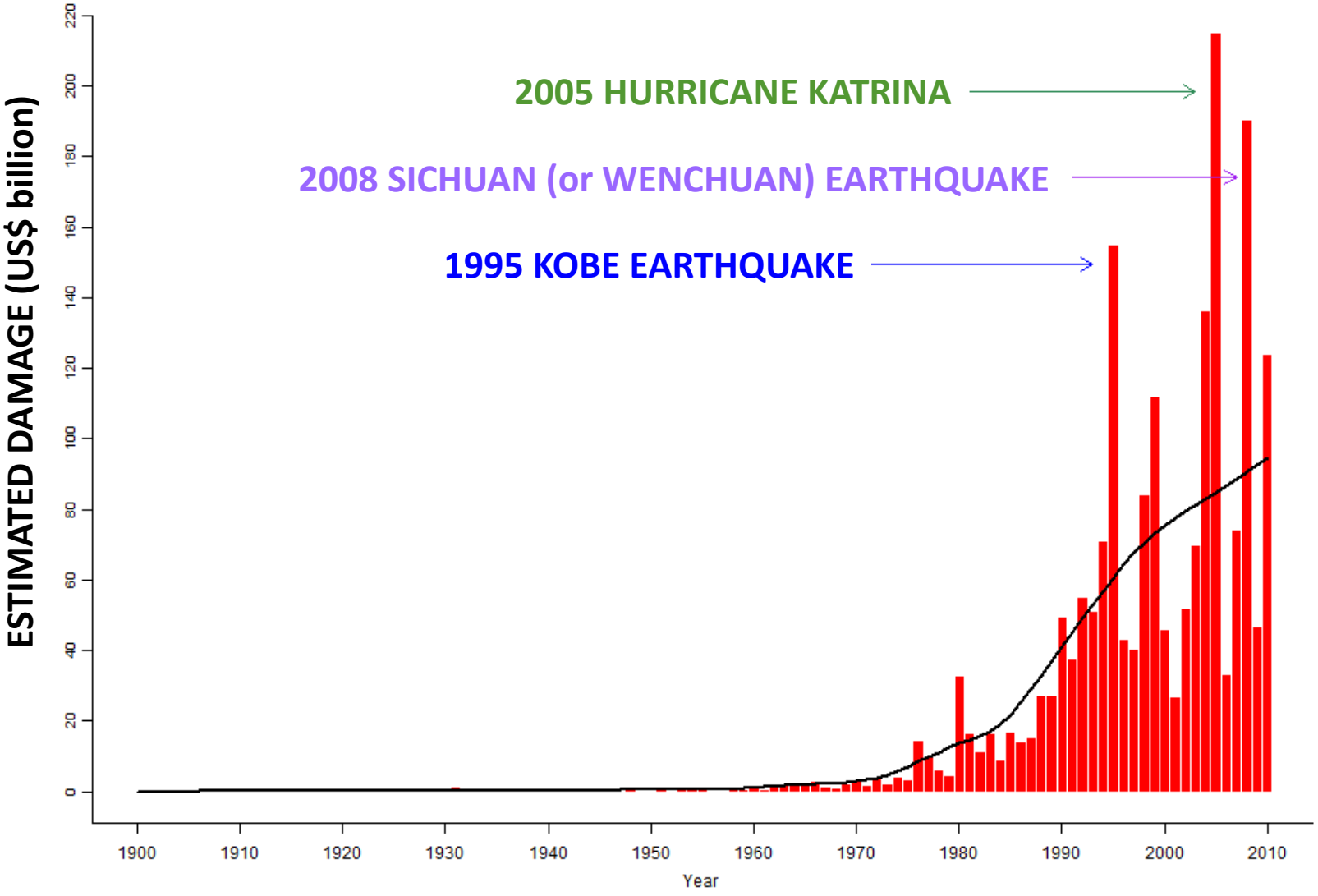
FREQUENCY & IMPACT ARE INCREASING

NATURAL DISASTER SUMMARY 1900 - 2010



EM-DAT: The OFDA/CRED International Disaster Database – www.emdat.be – Universite Catholique de Louvain - Brussels, Belgium

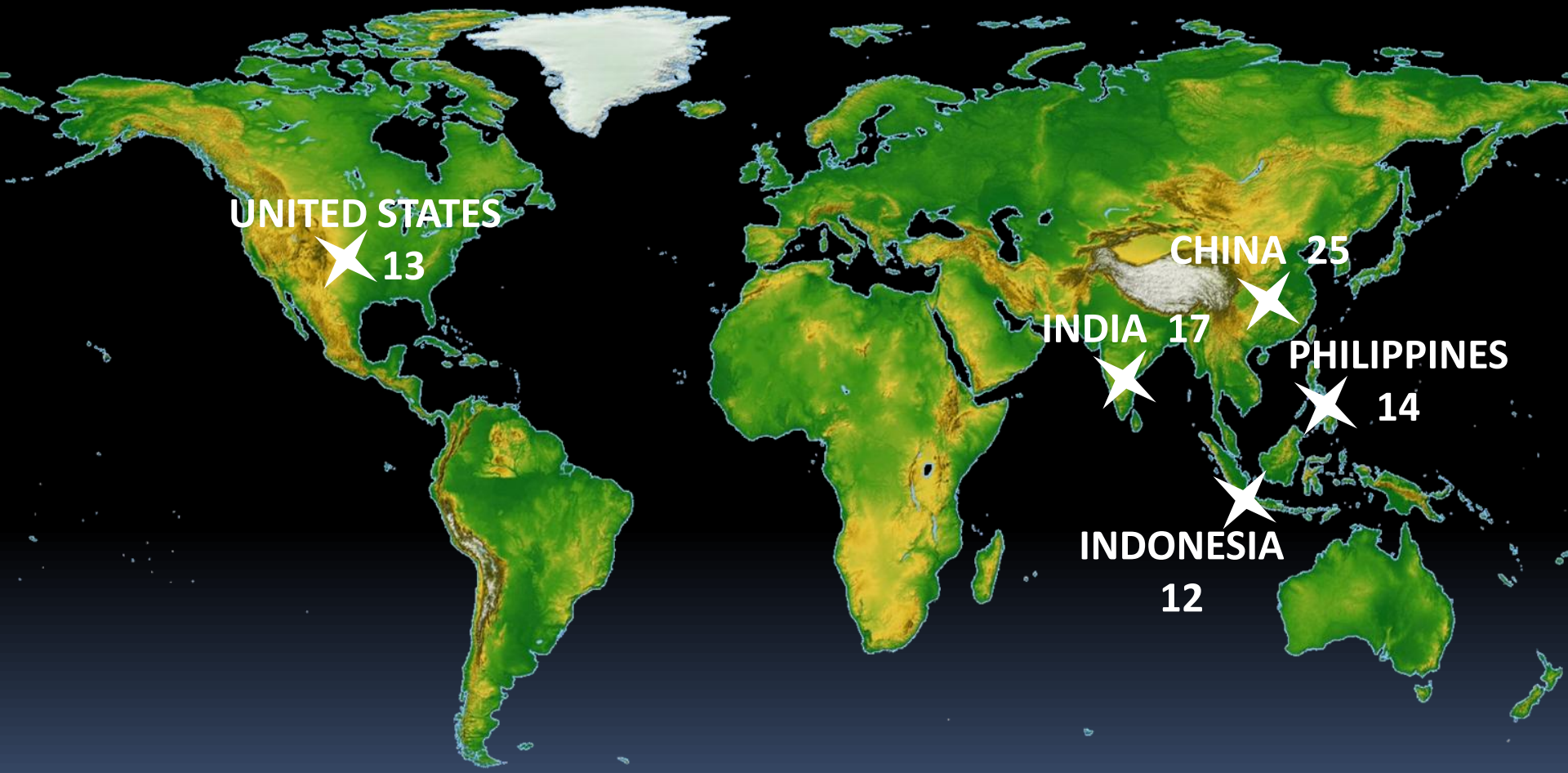
ESTIMATED DAMAGE (US$ billion) CAUSED BY REPORTED NATURAL DISASTERS 1900-2010



EM-DAT: The OFDA/CRED International Disaster Database – www.emdat.be – Universite Catholique de Louvain - Brussels, Belgium

2010 IN REVIEW

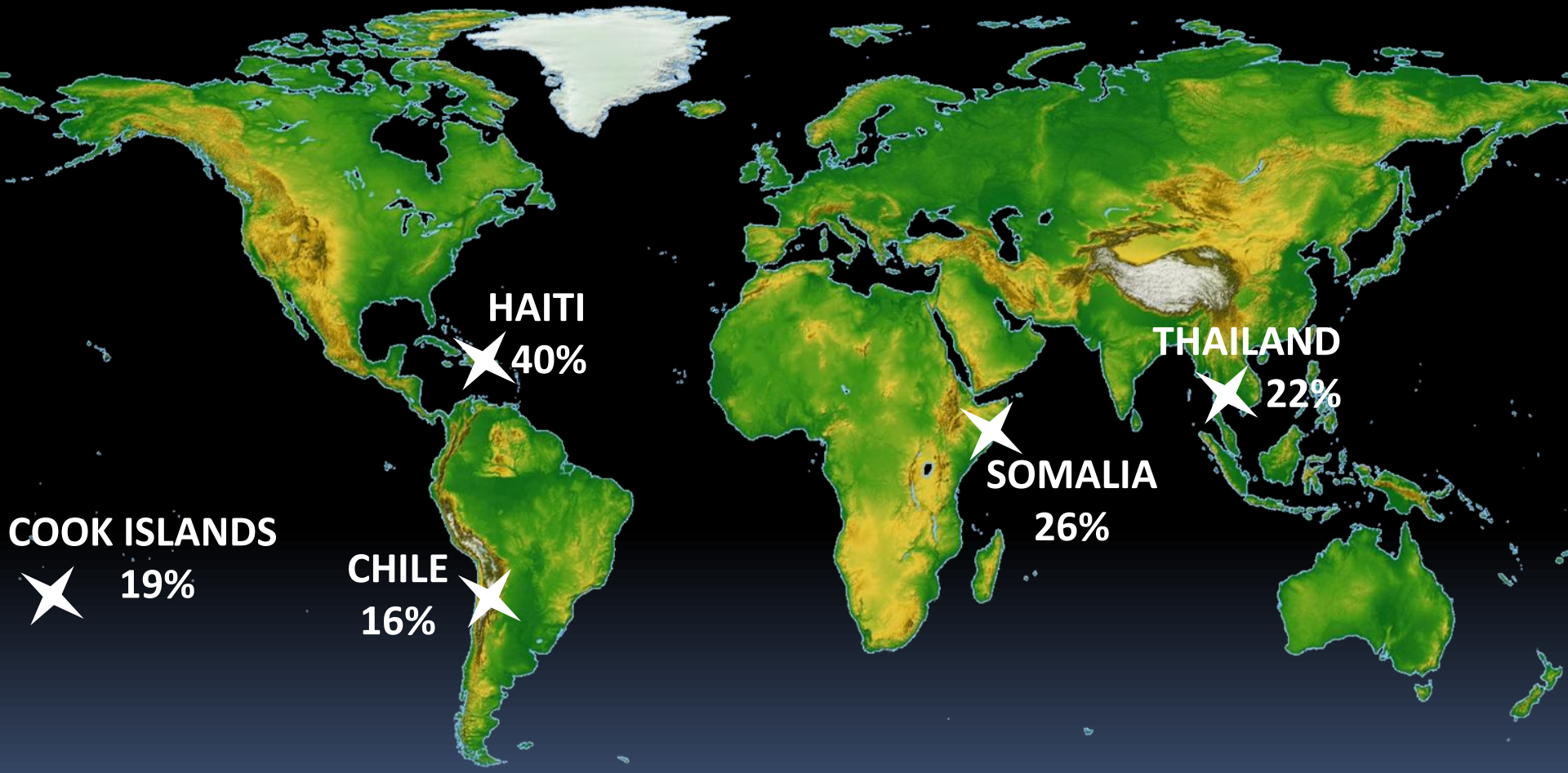
385 GLOBAL NATURAL DISASTERS in 2010



Statistics for 2010 data sourced from the Annual Disaster Review 2010
published by the Centre for Research on the Epidemiology of Disasters (CRED)

Statistics for 2010 data sourced from the Annual Disaster Review 2010
published by the Centre for Research on the Epidemiology of Disasters (CRED)

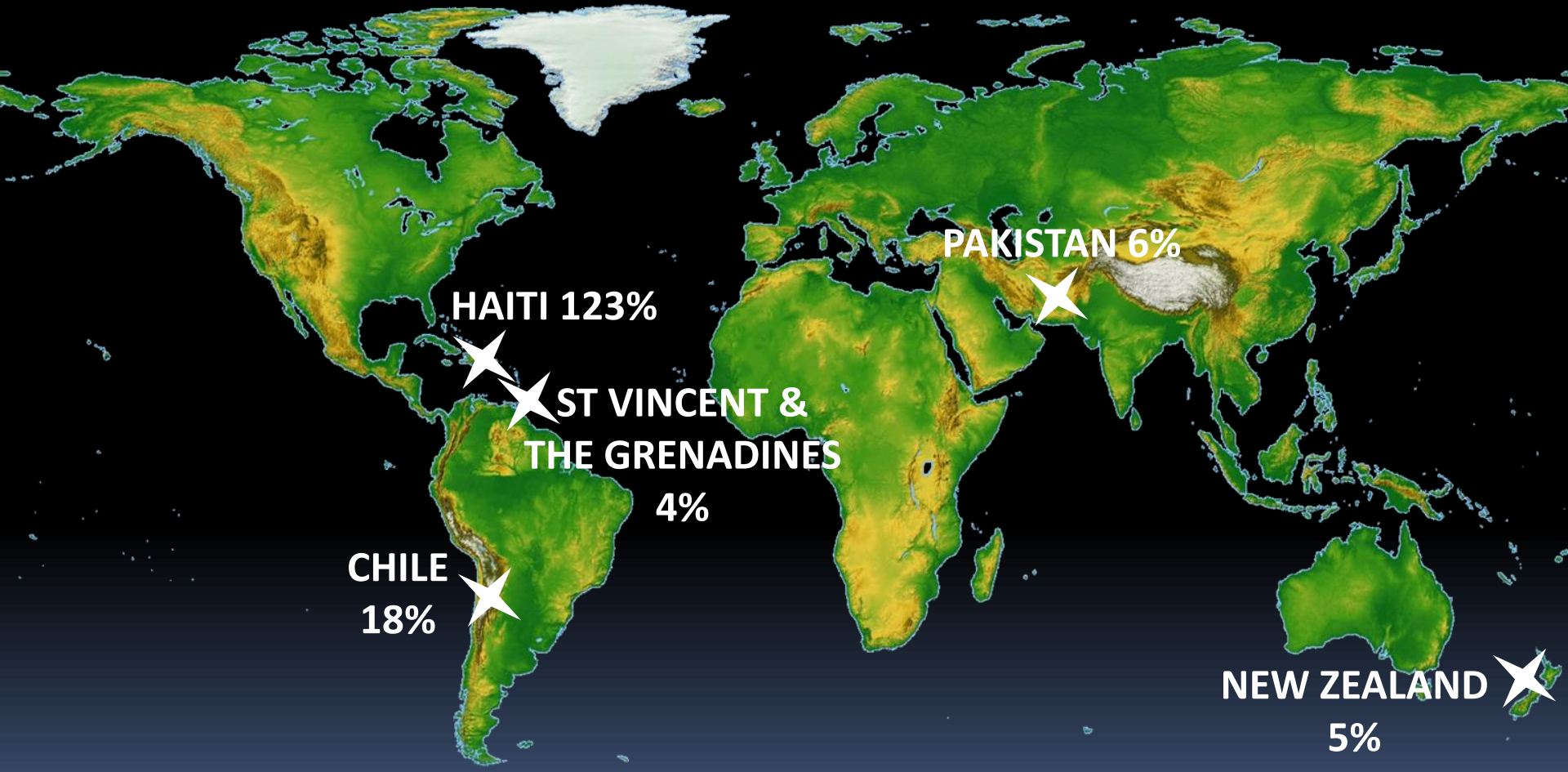
217 MILLION PEOPLE AFFECTED
~3% of the world population



PERCENTAGE VICTIMS BASED ON TOTAL POPULATION

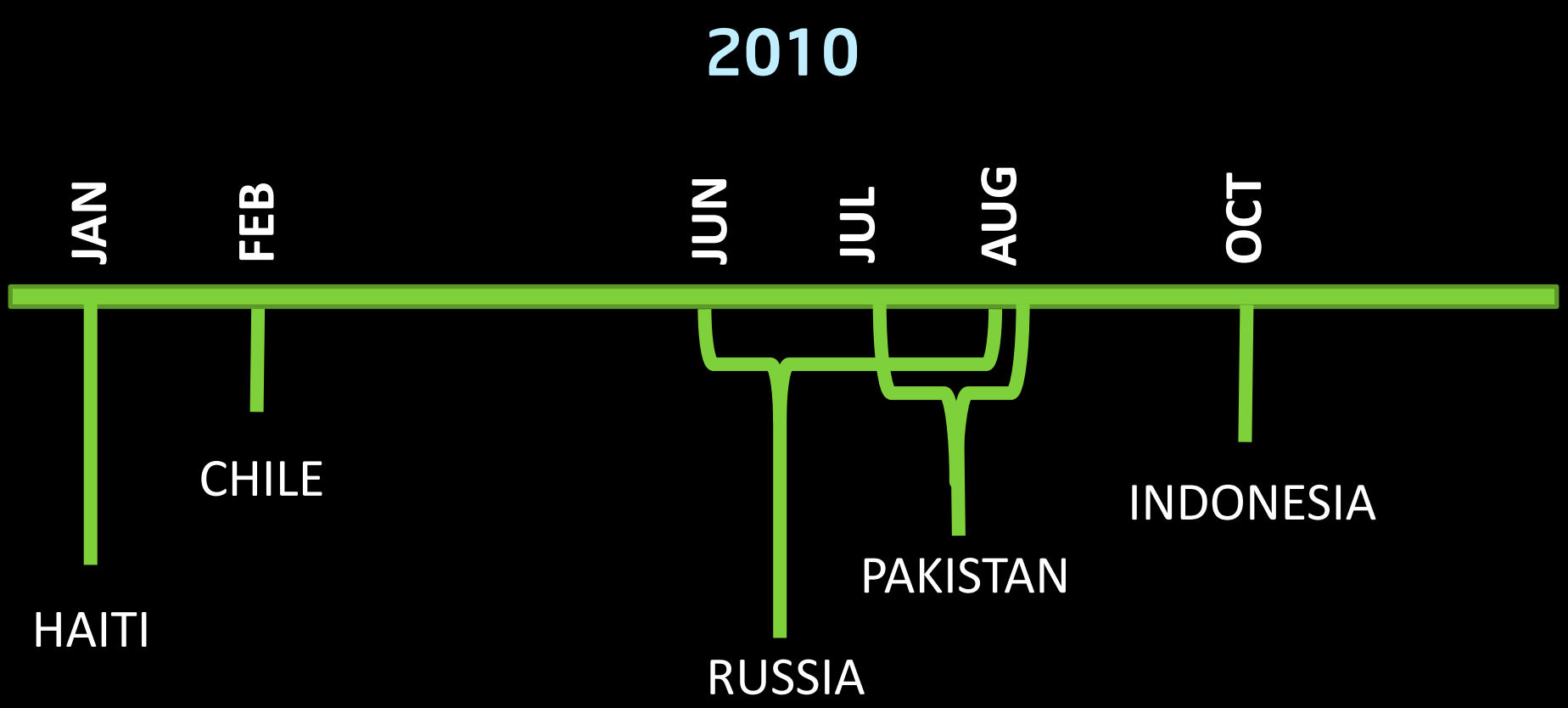
Statistics for 2010 data sourced from the Annual Disaster Review 2010
published by the Centre for Research on the Epidemiology of Disasters (CRED)

US$ 123.9 BILLION IN DAMAGES



PERCENTAGE OF GROSS DOMESTIC PRODUCT

Statistics for 2010 data sourced from the Annual Disaster Review 2010
published by the Centre for Research on the Epidemiology of Disasters (CRED)



IMPACTFUL DISASTERS IN RELATION TO INFORMATION TECHNOLOGY

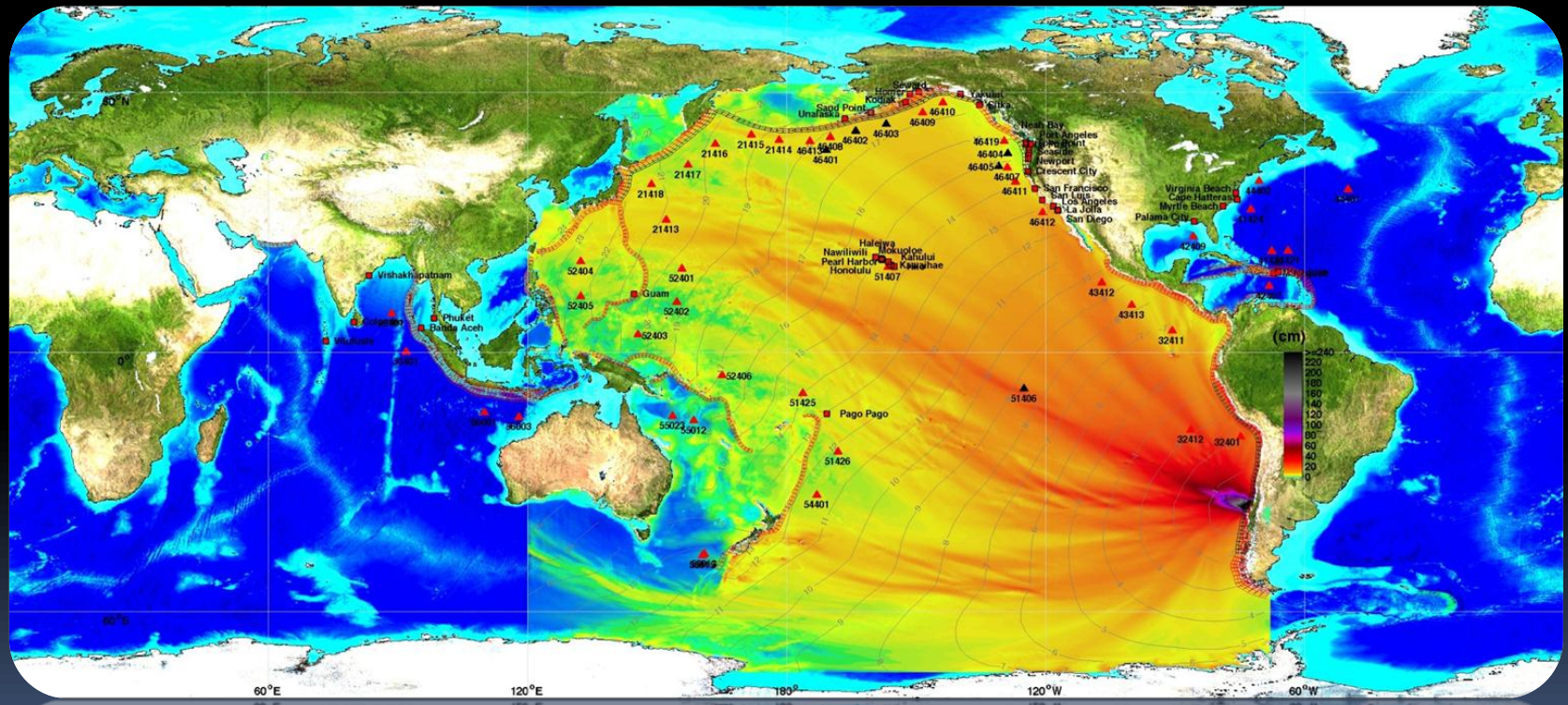
HAITI JANUARY 12th 2010
MAGNITUDE 7.0 EARTHQUAKE

>300,000 people perished
3.9 million affected
Estimated US$ 8.0 billion in damages

Statistics for 2010 data sourced from the Annual Disaster Review 2010 published by the Centre for Research on the Epidemiology of Disasters (CRED)

CHILE FEBRUARY 27th 2010
MAGNITUDE 8.8 EARTHQUAKE

562 people perished
2.7 million affected
Estimated US$ 30 billion in damages



Map of wave amplitudes courtesy of NOAA / PMEL / Center for Tsunami Research

Statistics for 2010 data sourced from the Annual Disaster Review 2010 published by the Centre for Research on the Epidemiology of Disasters (CRED)

RUSSIA JUNE - AUGUST 2010
HEATWAVE

58,844 people perished

Millions affected

Estimated US$ 5.7 billion in damages

Statistics for 2010 data sourced from the Annual Disaster Review 2010 published by the Centre for Research on the Epidemiology of Disasters (CRED)

PAKISTAN JULY – AUGUST 2010
FLOODS

1,985 people perished

20.3 million affected

Estimated US$ 9.5 billion in damages

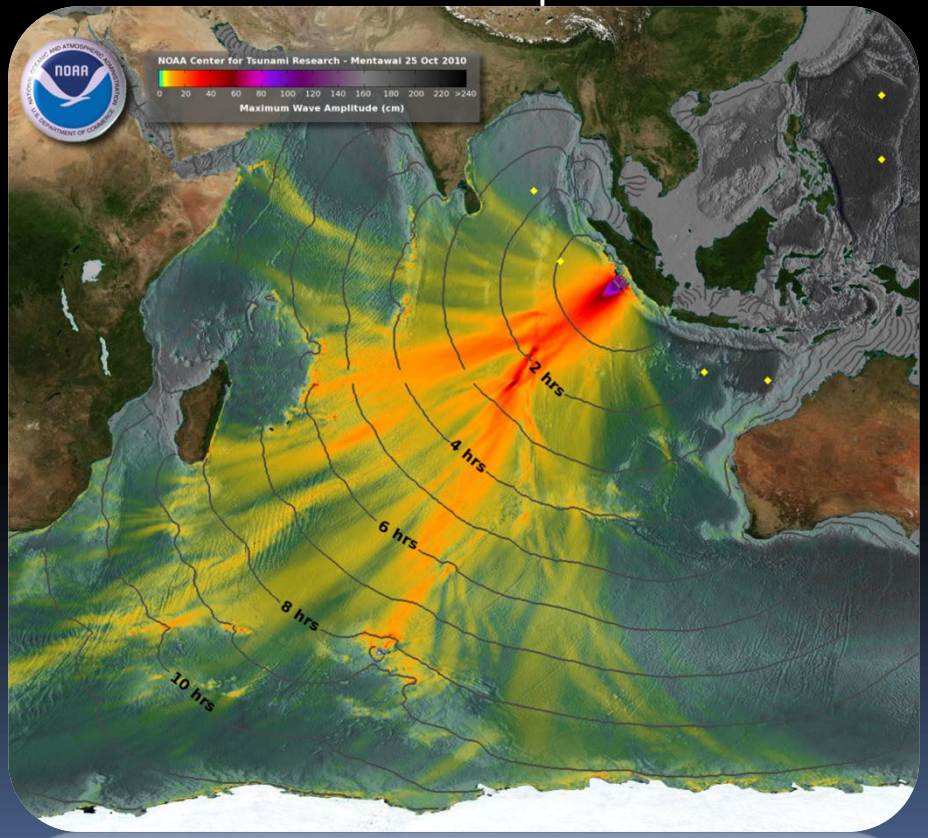
Statistics for 2010 data sourced from the Annual Disaster Review 2010 published by the Centre for Research on the Epidemiology of Disasters (CRED)

INDONESIA OCTOBER 25th 2010
VOLCANIC ERUPTION & MAGNITUDE 7.7 EARTHQUAKE

852 people perished
149,004 affected

Merapi Volcano

Tsunami from 7.7 earthquake



Statistics for 2010 data sourced from the Annual Disaster Review 2010 published by the Centre for Research on the Epidemiology of Disasters (CRED)

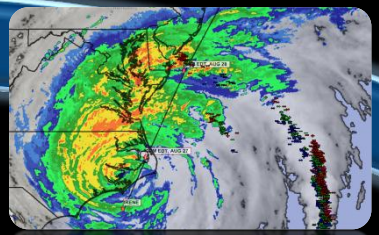
DISASTER LIFE CYCLE

MITIGATION

SEISMIC REINFORCEMENT

PREPAREDNESS

HURRICANE IRENE



EVENT

ICELAND VOLCANO

RESPONSE

JAPAN EARTHQUAKE

RECOVERY

HAITI EARTHQUAKE

MITIGATION

Perry Olson
Intel Corporation
Senior Director for Strategic Response & Global Activities

2011.03.11

-Symantec 2011 SMB Disaster Preparedness Survey, Jan. 2011

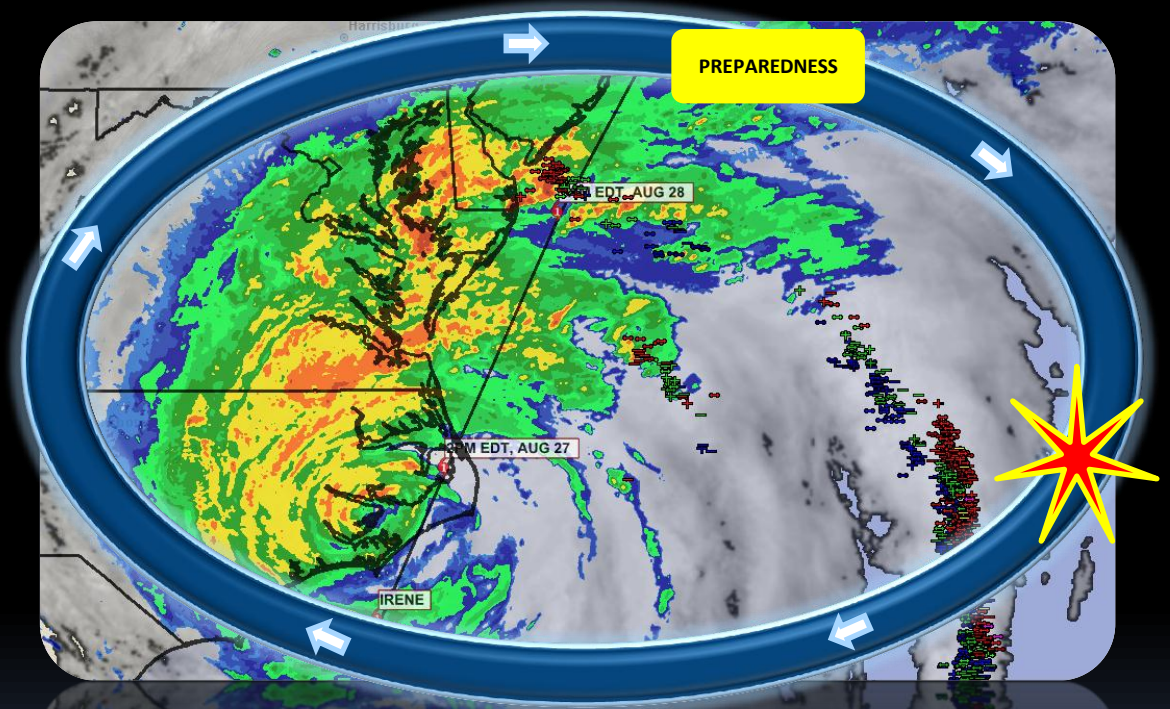
MITIGATION DEMOS AT SHOWCASE

Continuous Sensing for
Disaster Warning & Response

Extreme Event Simulation for
Disaster Preparedness

PREPAREDNESS

Bob Marshall
Earth Networks
President & CEO



Earth Networks℠

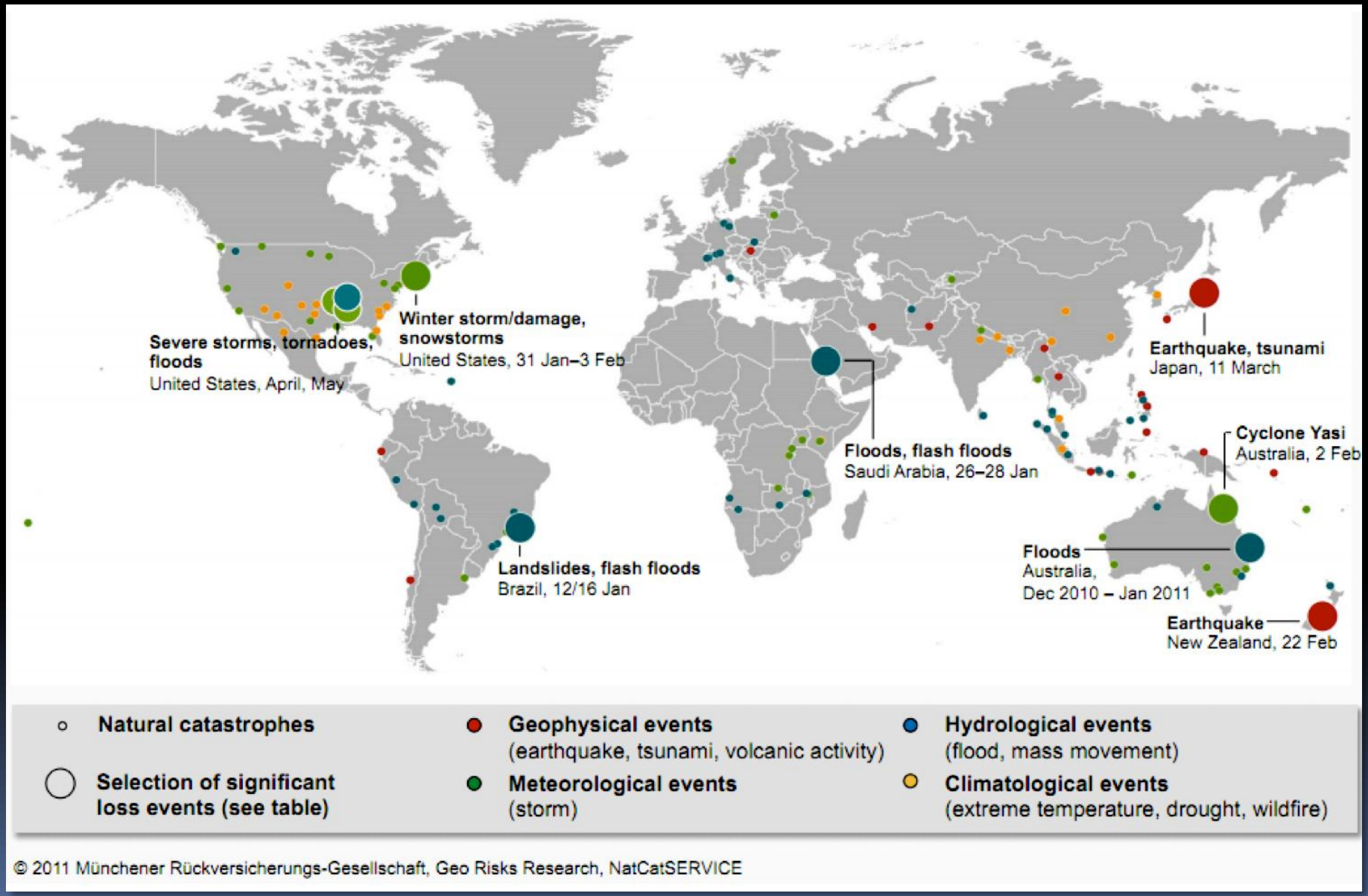
Taking the Pulse of the Planet℠

Weather, Lightning, Tornadoes and Hurricanes

Bob Marshall, President & CEO

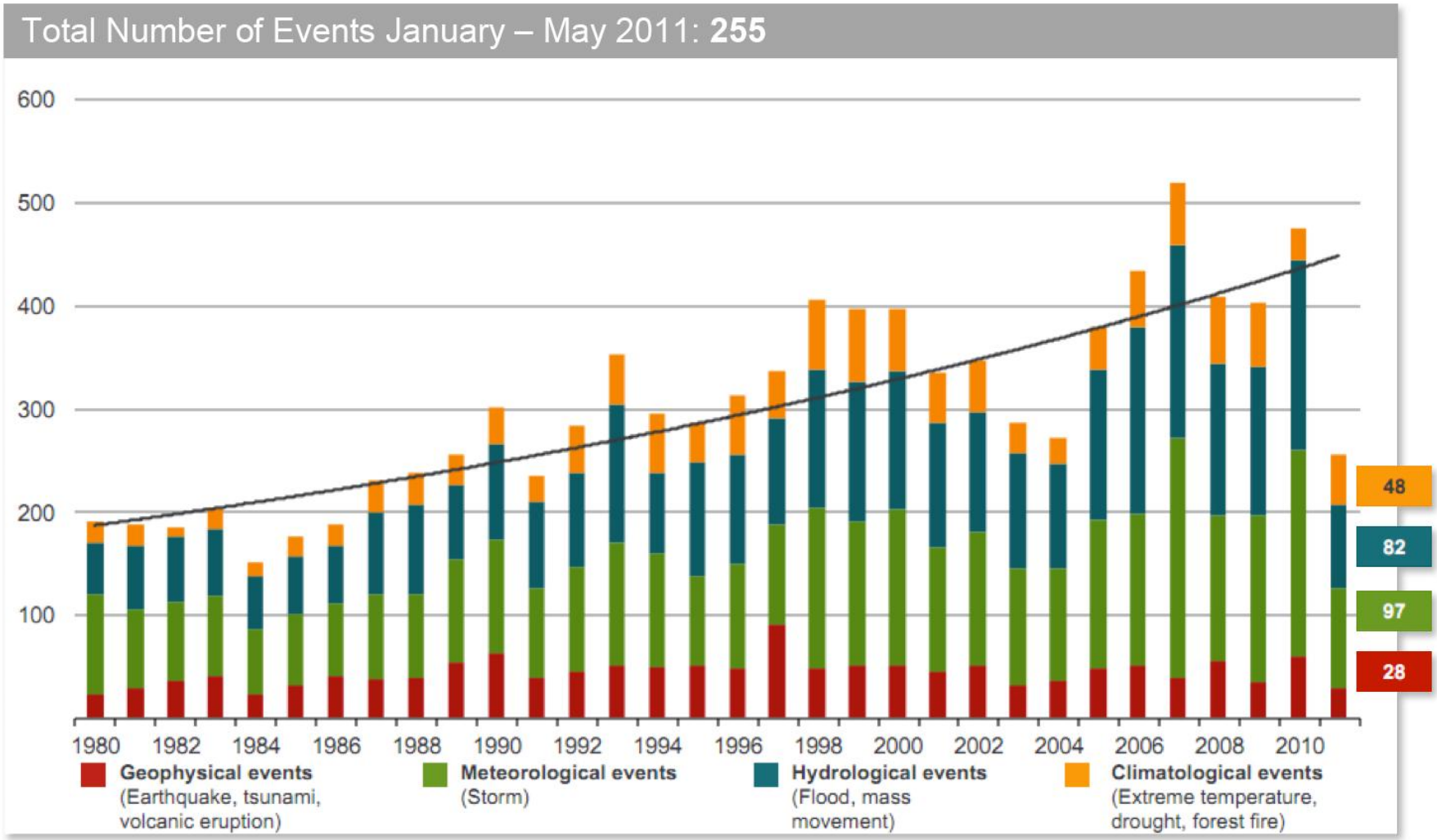
bmarshall@earthnetworks.com

Natural Catastrophes, Jan-May 2011



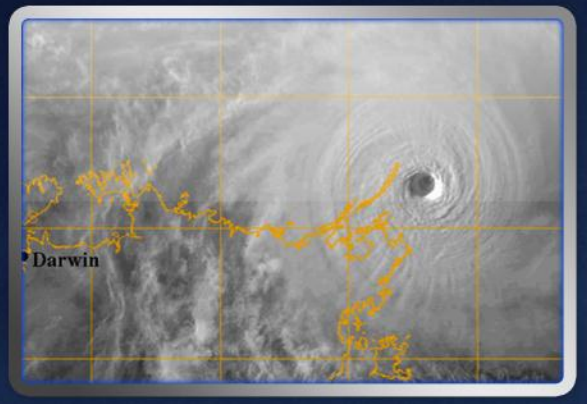
© 2011 Münchener Rückversicherungs-Gesellschaft, Geo Risks Research, NatCatSERVICE

Worldwide Natural Disasters 1980-2011



Source: MR NatCat*SERVICE*

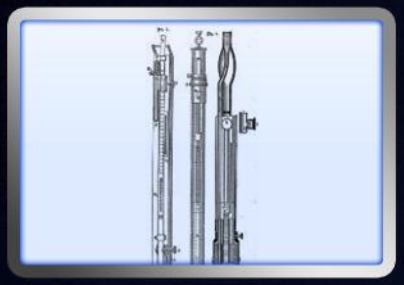
© 2011 Munich Re


Darwin

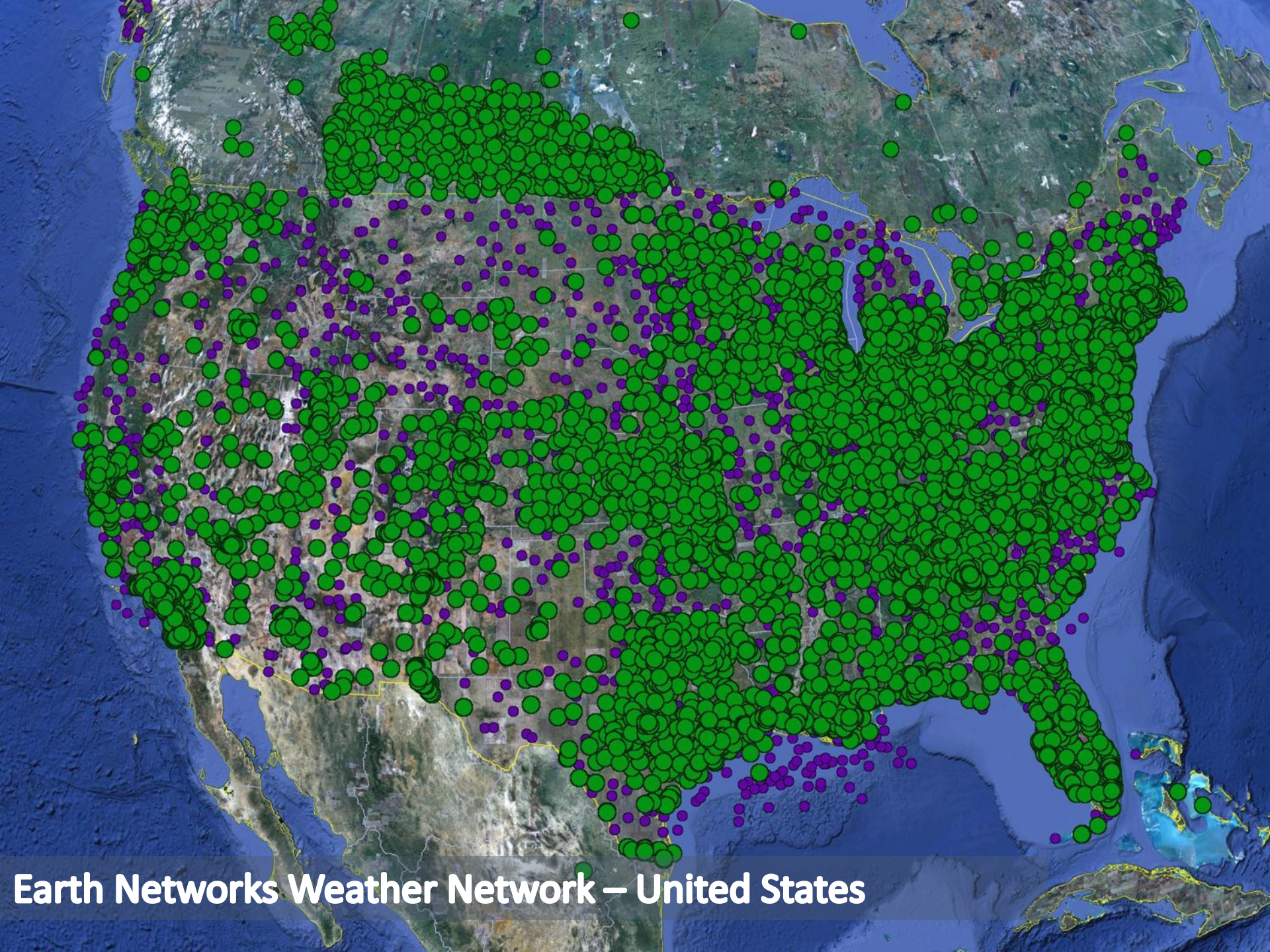
MICHIGAN

Evolution of Weather Observation Technology

From Past...



To Present...


Earth Networks Weather Network – United States

Earth Networks℠

World's Largest Weather Network

5 billon connections per day

Earth Networks℠

World's Largest Weather Network

5 billon connections per day

Tornado: Springfield, MA

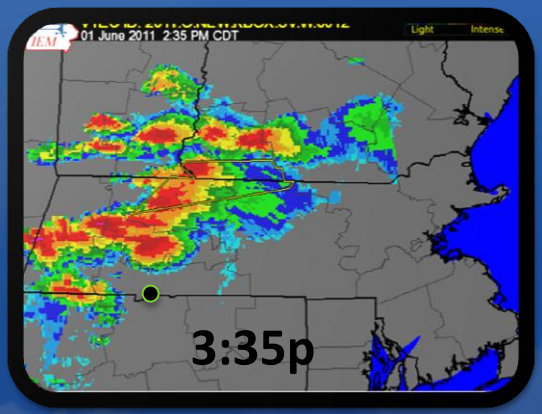
4 fatalities, 200 injuries
June 2001

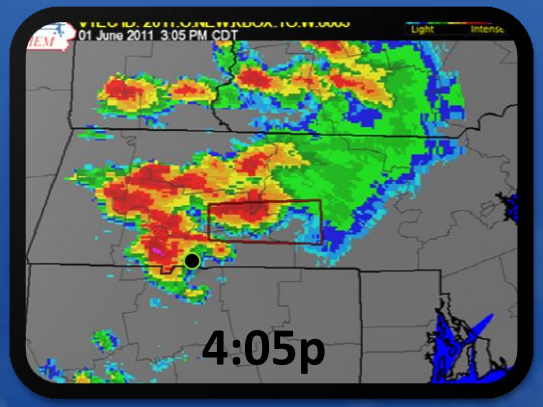
The New York Times

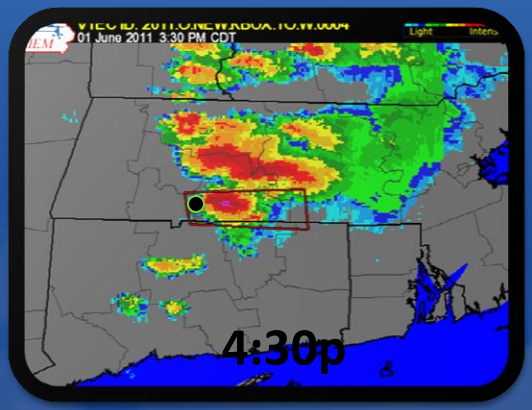
Asked whether residents had had sufficient time to seek shelter as the twisters appeared*, (Governor of MA Deval Patrick)* Mr. Patrick said the emergency system had worked as well as it could.

'The National Weather Service gave all the warning it had, and you know what that was in Springfield?" he said.
"That was 10 minutes.'

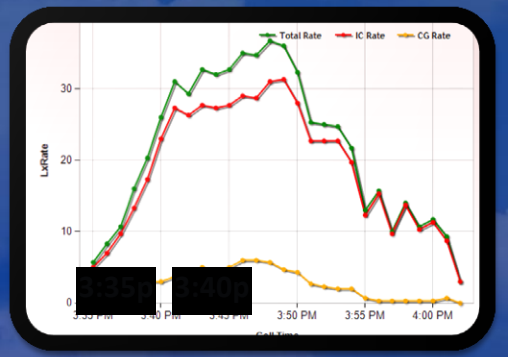
Deadly Tornado in Springfield, Massachusetts – how can new technology help?







Tornado on Ground at ~4:30p



6/1/2011

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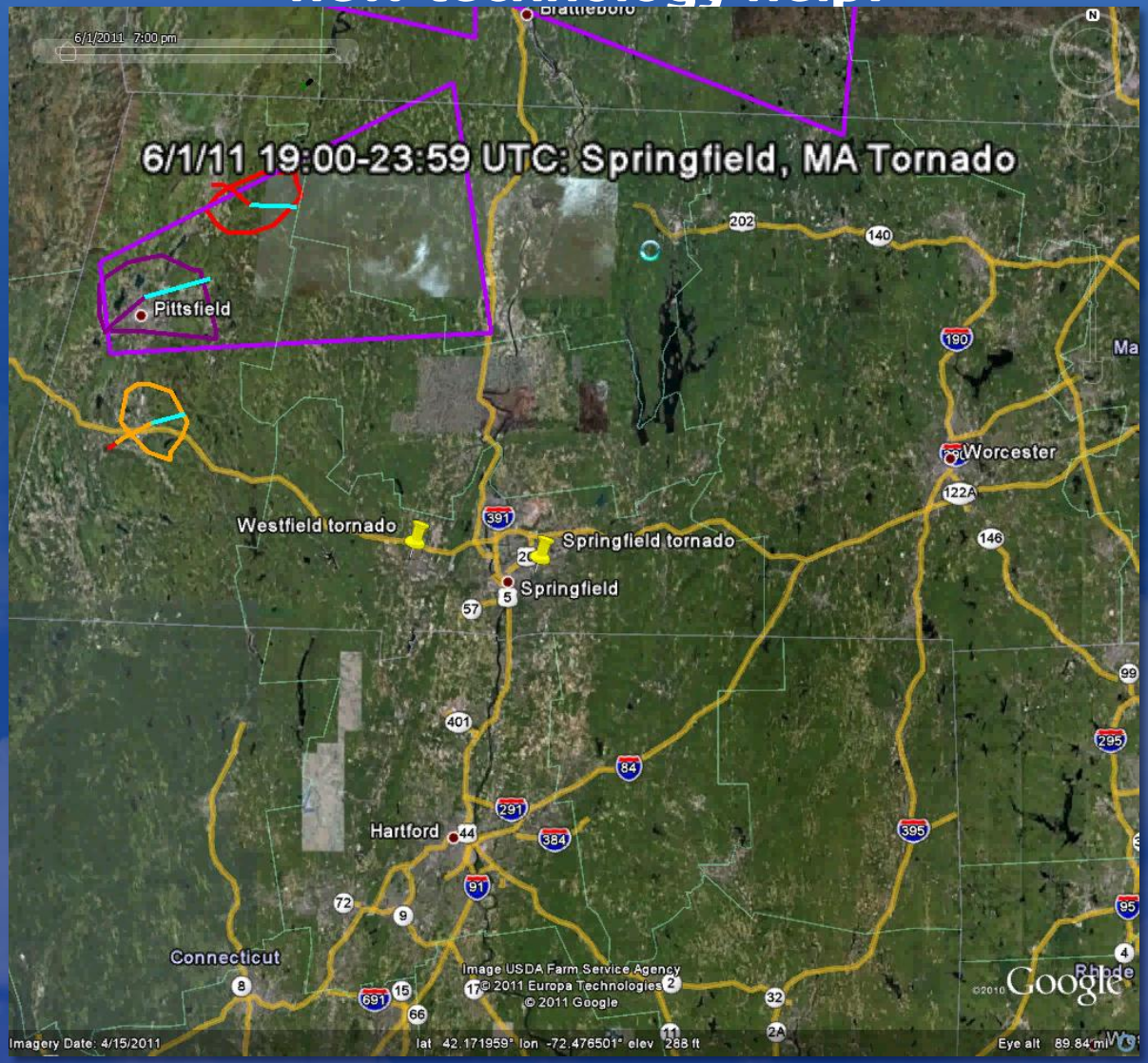
Deadly Tornado in Springfield, Massachusetts – how can new technology help?



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Hurricane Irene: The Latest Multi-Billion $$$ Disaster

Track Forecasts Accurate – Intensity Forecasts Weak

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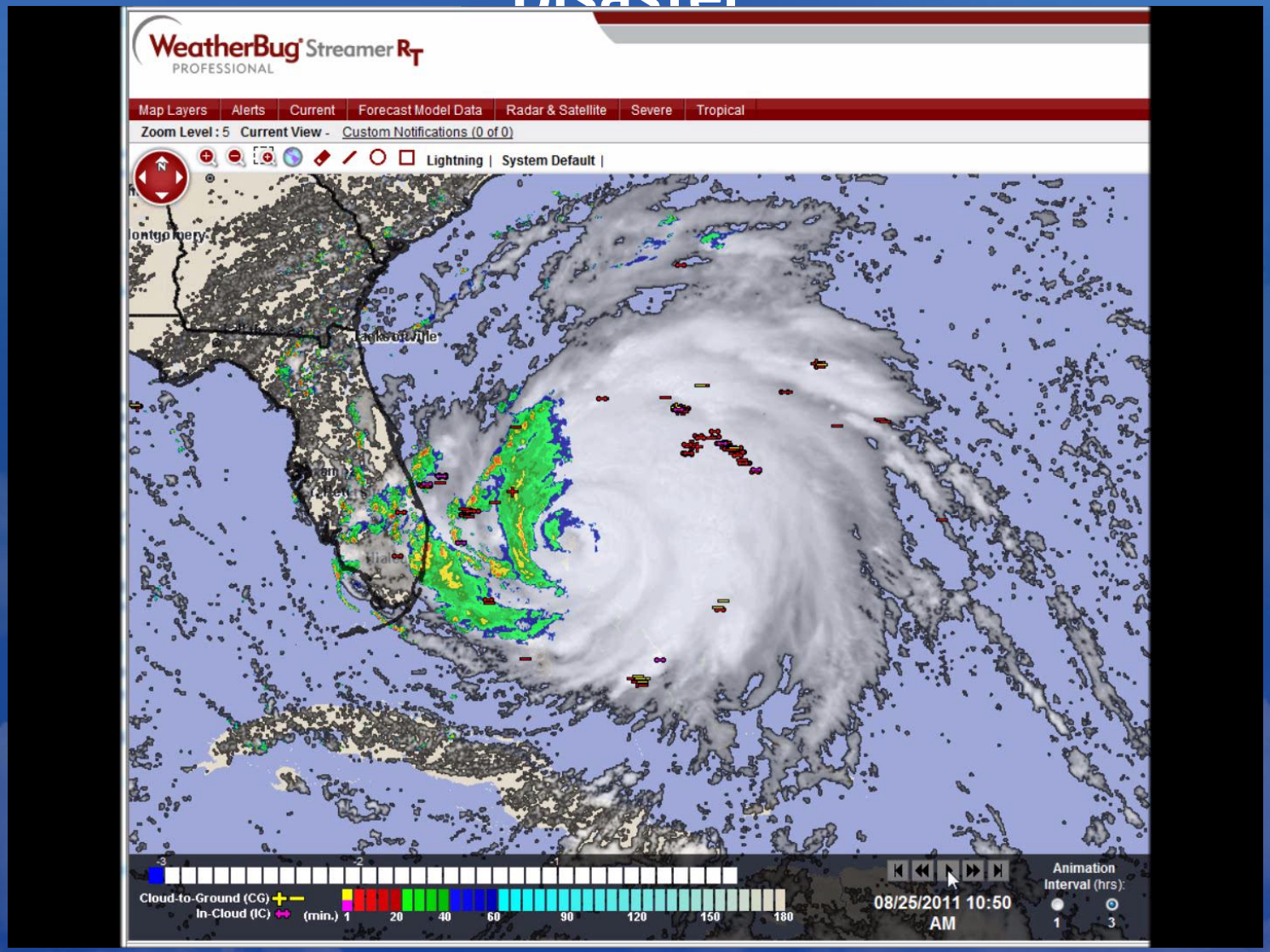
Hurricane Irene: The Latest multi-Billion $$$ Disaster



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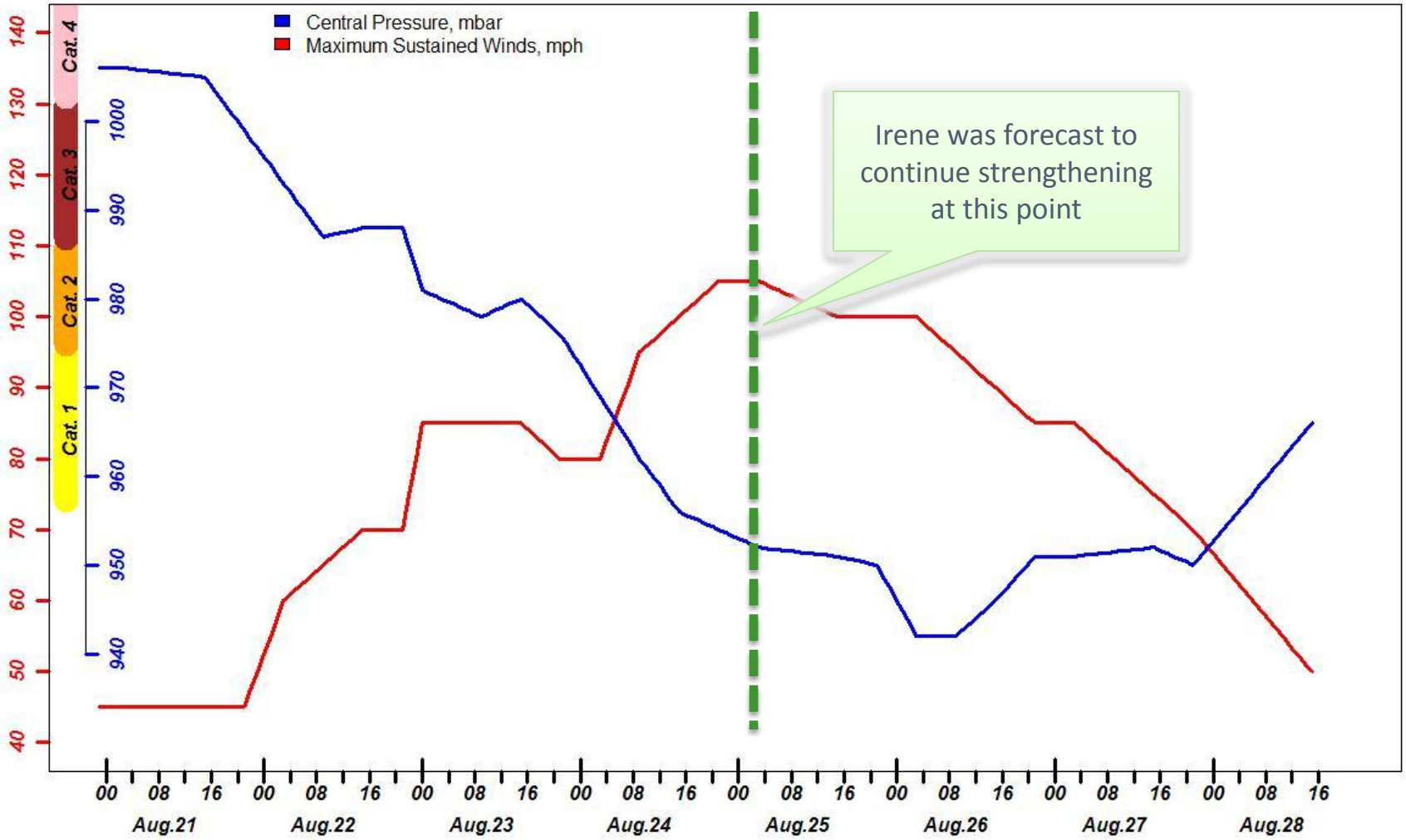
Hurricane Irene Total Lightning History



Time history of Hurricane Irene's Central Pressure and Maximum Sustained Winds, which are the key indicators of the intensity of the storm. Peak storm intensity was on or about August 25th

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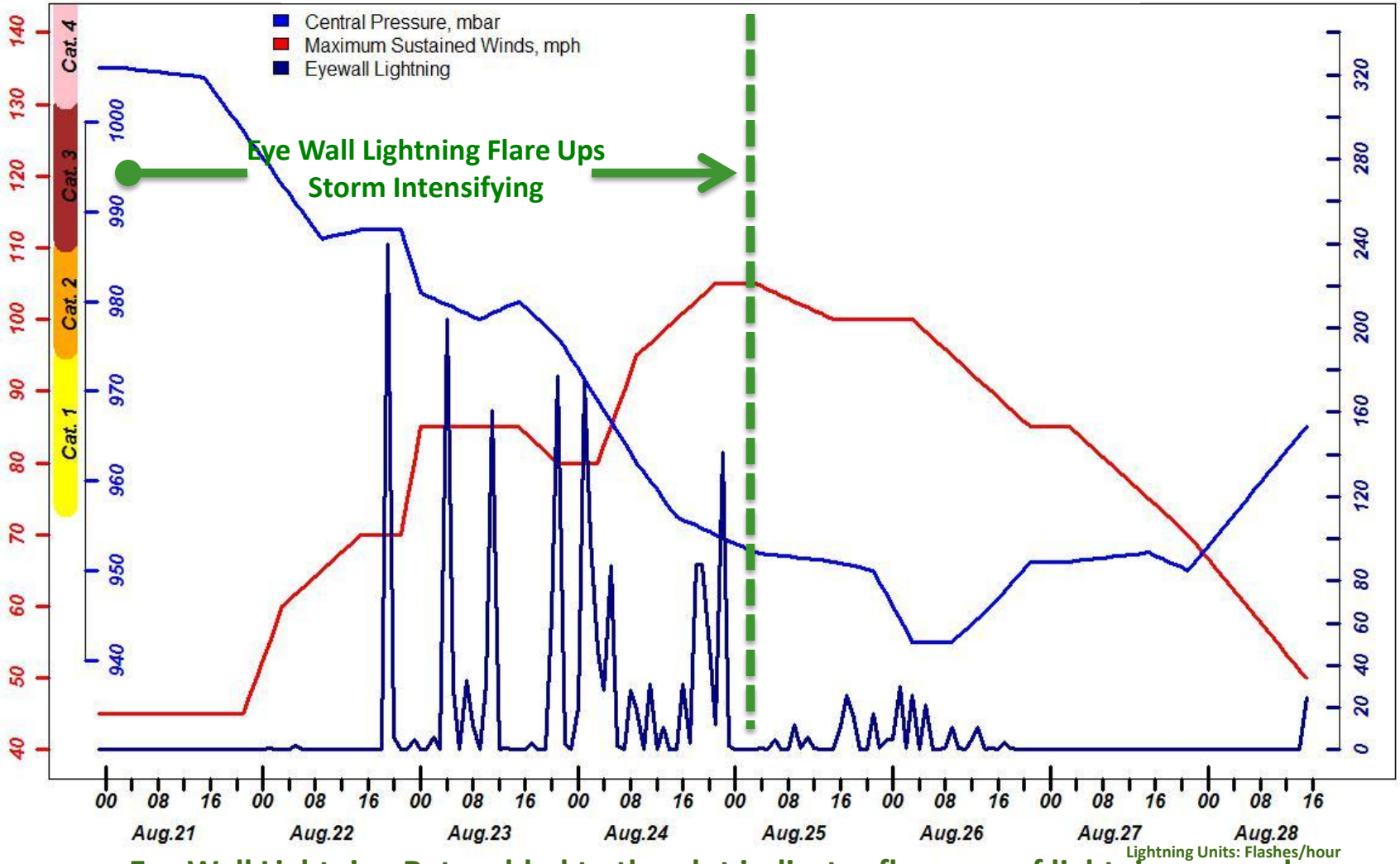
Hurricane Irene Total Lightning History



Eye Wall Lightning Rate added to the plot indicates flare ups of lightning around Hurricane Irene's eyewall from August 22-24, when Irene was strengthening

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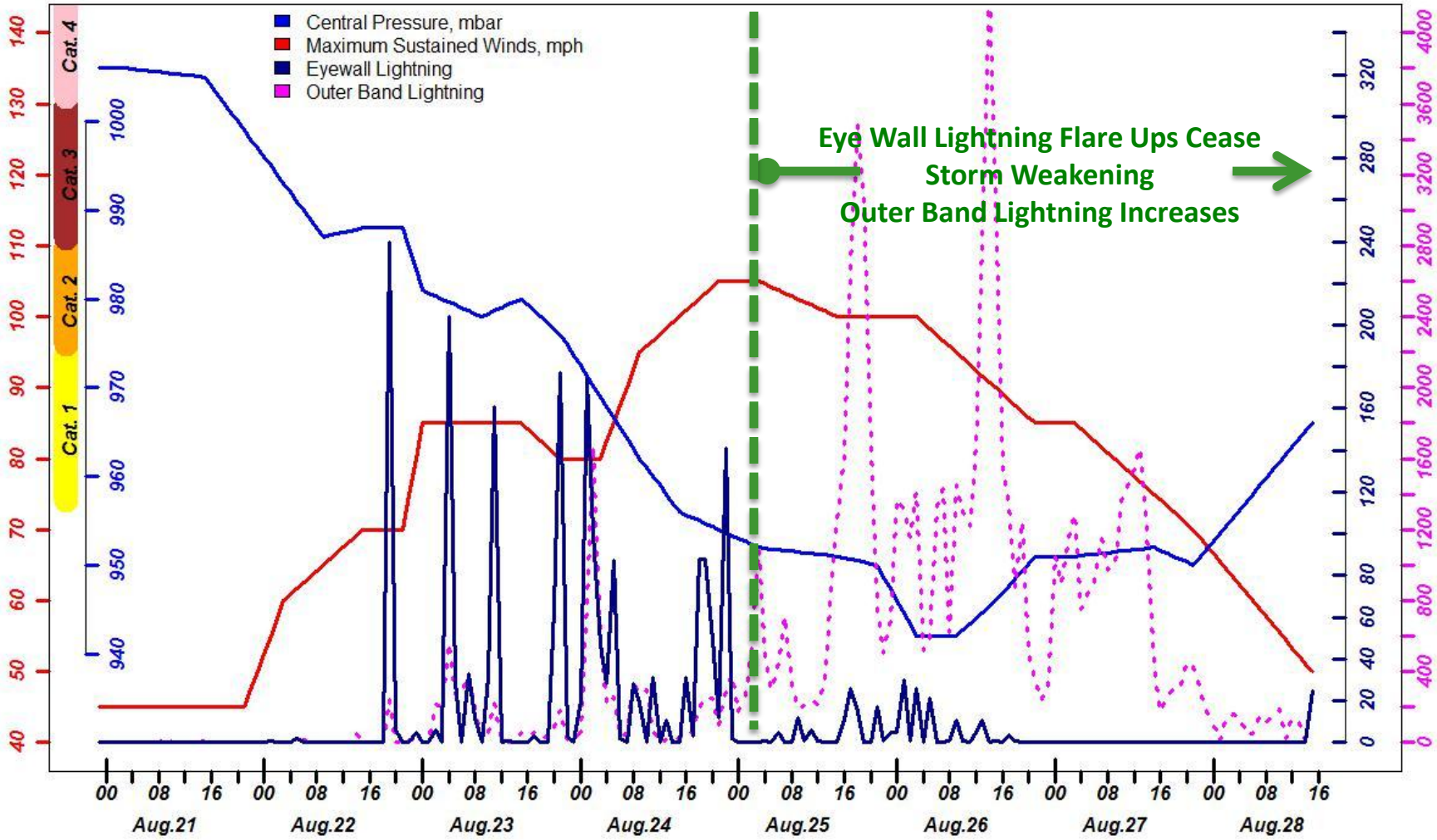
Hurricane Irene Total Lightning History



Lightning Units: Flashes/hour

Outer Band Lightning Rate added to the plot indicates significant increases in outer band lightning when Irene was weakening from August 25-28

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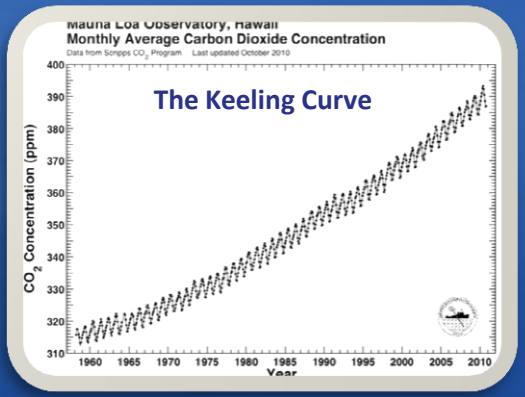
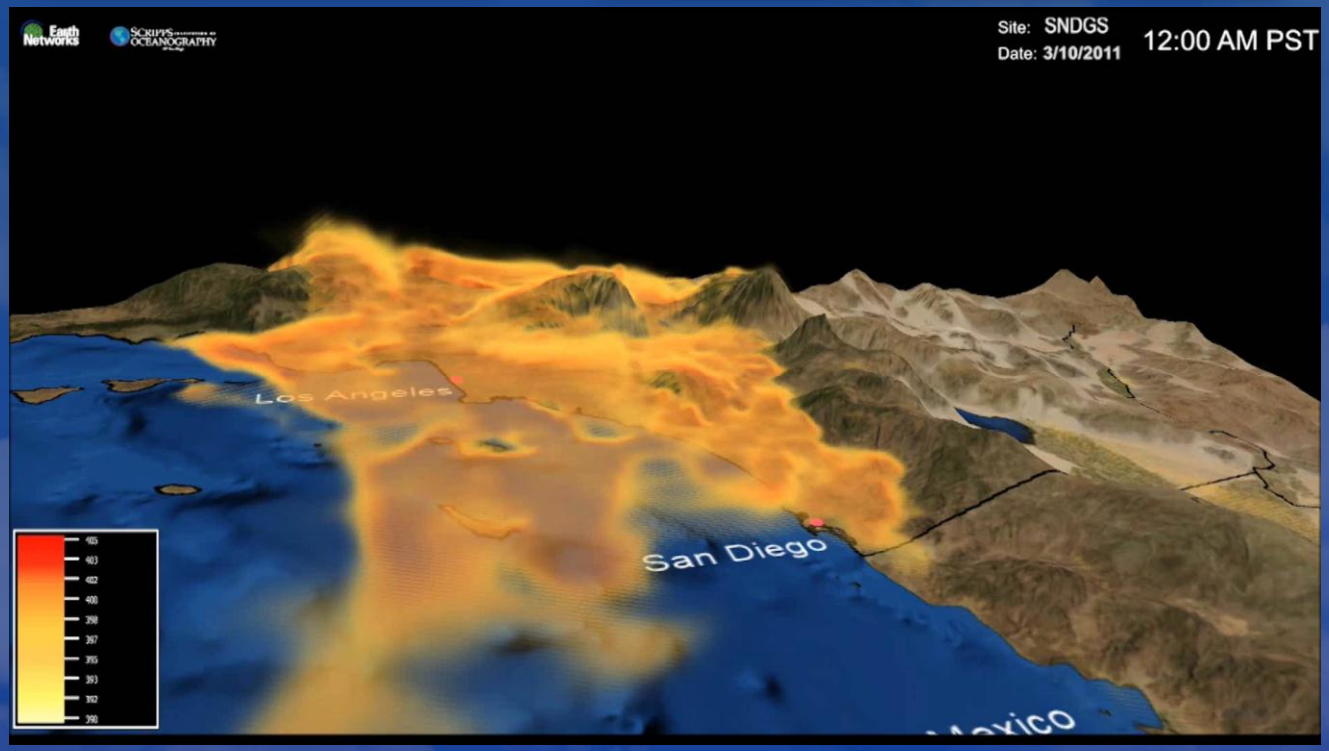
Next: Taking the Pulse of Our Climate

CO2 Concentrations





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Thank You

PREPAREDNESS DEMOS AT SHOWCASE

Evacuation Traffic Management Through Crowd-Sourcing

Always On Disaster Warnings for Mobile Devices

EARTH NETWORKS

RESPONSE

Michael Bowers
Mercy Corps
Senior Director for Strategic Response & Global Activities

Frank Schott
NetHope
Global Program Director

MercyCorps

Be the change

Mercy Corps Emergency Response

Michael Bowers, Senior Director

Strategic Response & Global Emergencies

Intel Developer Forum

San Francisco, September 2011

Emerging Themes 21st Century

1. Larger populations at risk
2. Globalized economy and the affects of disaster
3. A complex environment

India: Gujarat Earthquake, 2001

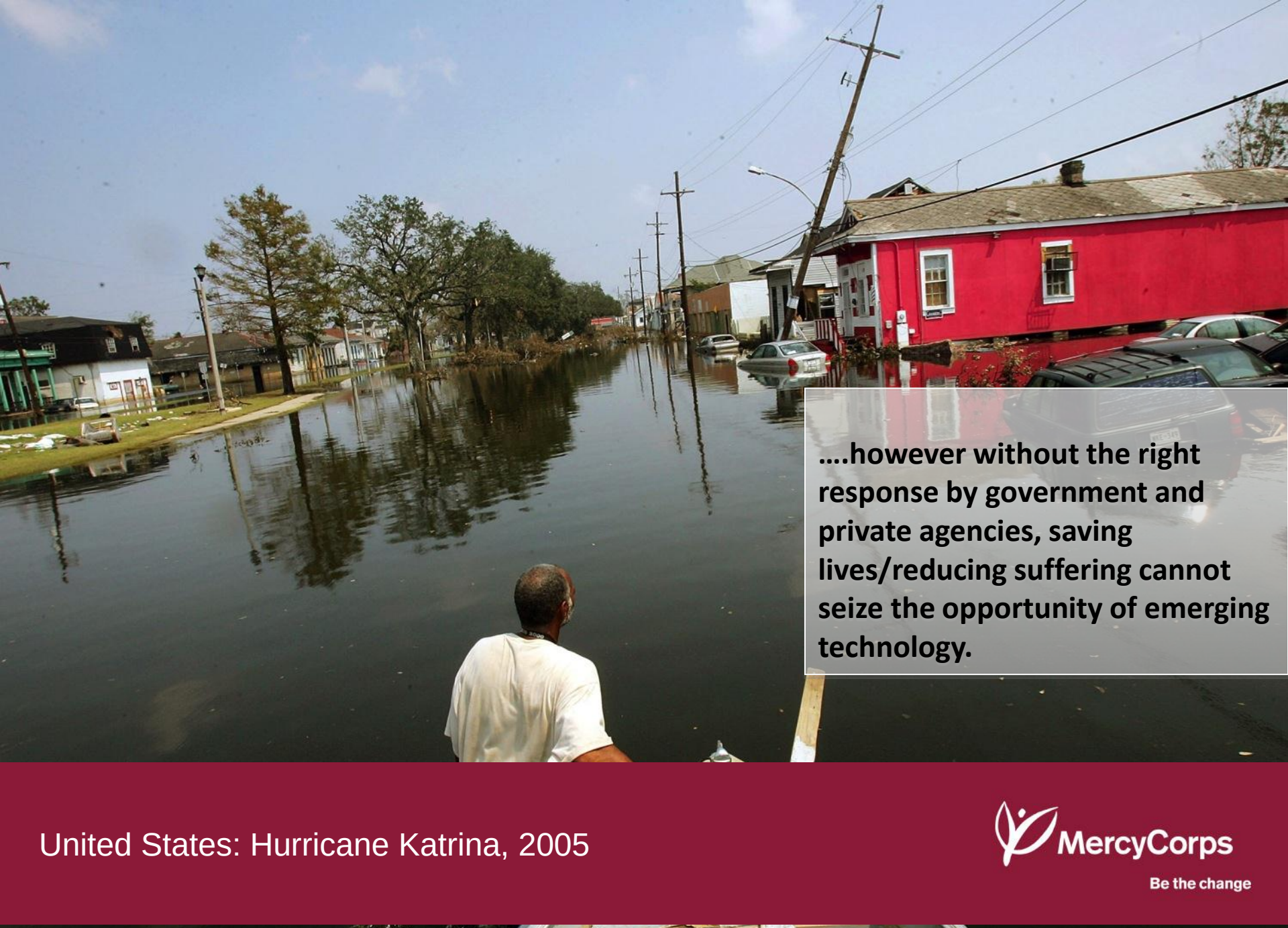
MercyCorps

Be the change

Indonesia: Indian Ocean Tsunami, 2004

MercyCorps

Be the change



….however without the right response by government and private agencies, saving lives/reducing suffering cannot seize the opportunity of emerging technology.

United States: Hurricane Katrina, 2005

MercyCorps

Be the change

Haiti: Earthquake, 2010

MercyCorps

Be the change

Pakistan: Flooding, 2010

MercyCorps

Be the change

A localized event that can trigger a global response occurs in rich as well as poor countries – with dramatically different effect.

Japan: Earthquake & Tsunami, 2011
Local Partner Coordination

MercyCorps
Be the change

Kenya: Drought & Famine, 2011
Emergency Water Distribution

MercyCorps
Be the change

Ethiopia: Drought & Famine, 2011
Mobile Emergency Clinic

MercyCorps
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China: Sichuan Earthquake, 2008
Comfort for Kids Distribution

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Be the change

Applying solutions in a complex disaster such as an earthquake (in a failed state).

Haiti: Earthquake, 2010
Mobile Technology Cash Transfers

MercyCorps
Be the change

Haiti: Earthquake, 2010
Mobile Technology Cash Transfers

MercyCorps
Be the change

Introduction to Mercy Corps

WHERE WE WORK

WORLDWIDE PROGRAMS

Africa
Central African Republic
DR Congo*
Ethiopia*
Kenya*
Liberia*
Niger*
Somalia*
South Sudan*
Tunisia*
Uganda*
Zimbabwe

Americas
Colombia
Guatemala
Haiti*
Honduras*
Nicaragua
United States*

Asia
Afghanistan*
China*
India*
Indonesia*
Japan*
Mongolia
Myanmar*
Nepal
North Korea (DPRK)*
Pakistan*
Philippines
Sri Lanka*
Timor-Leste

Balkans/Caucasus/ Central Asia
Georgia*
Kosovo
Kyrgyzstan*
Tajikistan*

Middle East
Egypt*
Iraq*
Jordan
Lebanon*
Libya*
Syria
West Bank and Gaza*
Yemen

MercyCorps

** Emergency Response Program*

THANK YOU MICHAEL, WELCOME FRANK

NetHope
connect.
collaborate.
innovate.

This Is NetHope

Supporters

accenture
High performance. Delivered.
Adobe
Baker & McKenzie
Blackbaud
CDW
Cisco
ESRI
Fidelity Charitable Gift Fund
hp invent
intel
Microsoft
Michael & Susan Dell Foundation
The Rockefeller Foundation
USAID From the American People
Bill & Melinda Gates foundation
Waggener Edstrom Worldwide

Programs

- Connectivity
- Emergency Response
- Field Capacity Building
- Innovation For Development
- Shared Services

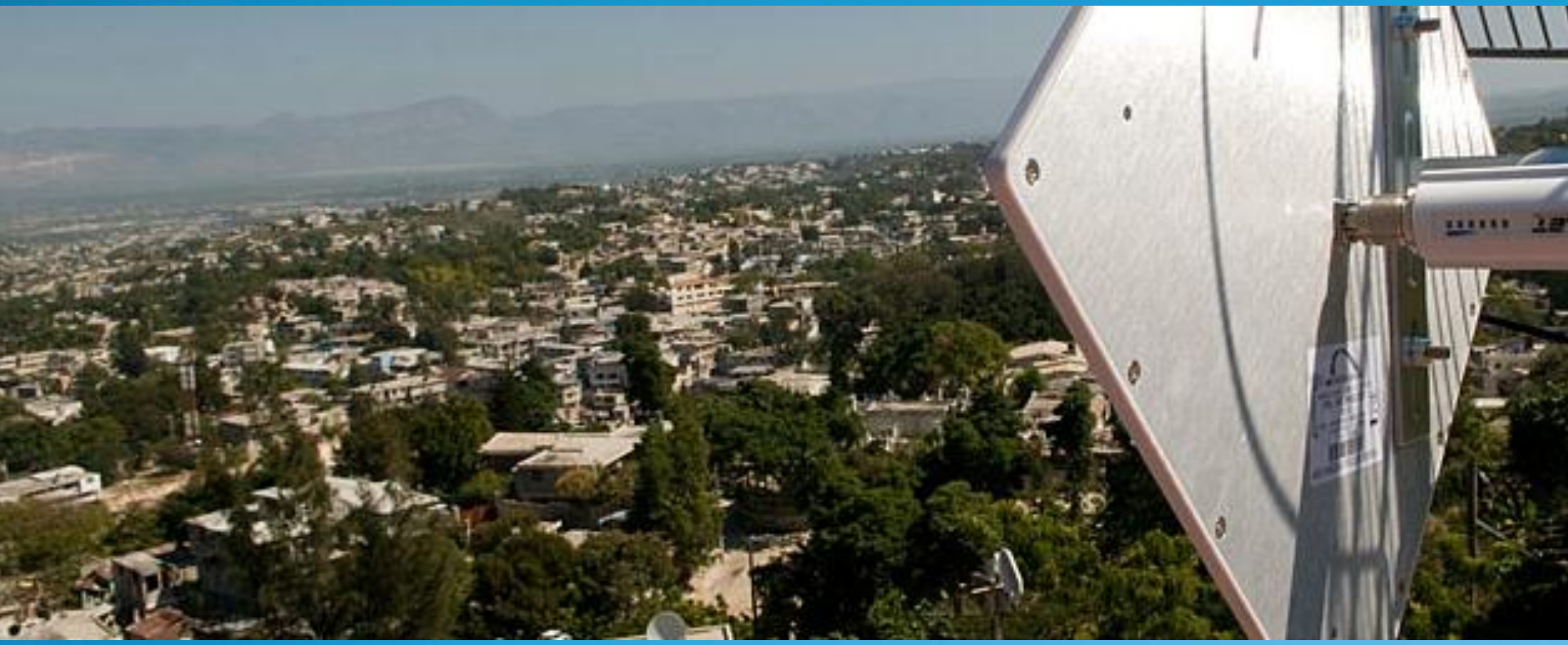
Members

The Nature Conservancy
CRS Catholic Relief Services
World Vision
Plan
Concern worldwide
Wildlife Conservation Society
Save the Children
fhi
care
ACCION
VSO Sharing skills Changing lives
Children International
Oxfam
ChildFund International
Ashoka
Pact
Heifer International
CHF International
Habitat for Humanity
SOS Children's Villages International
Relief International
WaterAid
christian aid We believe in life before death
MercyCorps
actionaid international
Opportunity International
International Rescue Committee
PATH
FINCA
Winrock International
International Federation of Red Cross and Red Crescent Societies

Beneficiaries

The world faces enormous challenges

Communications are the lifeline of every major emergency response effort



NetHope
WIRING THE GLOBAL VILLAGE

inveneo®

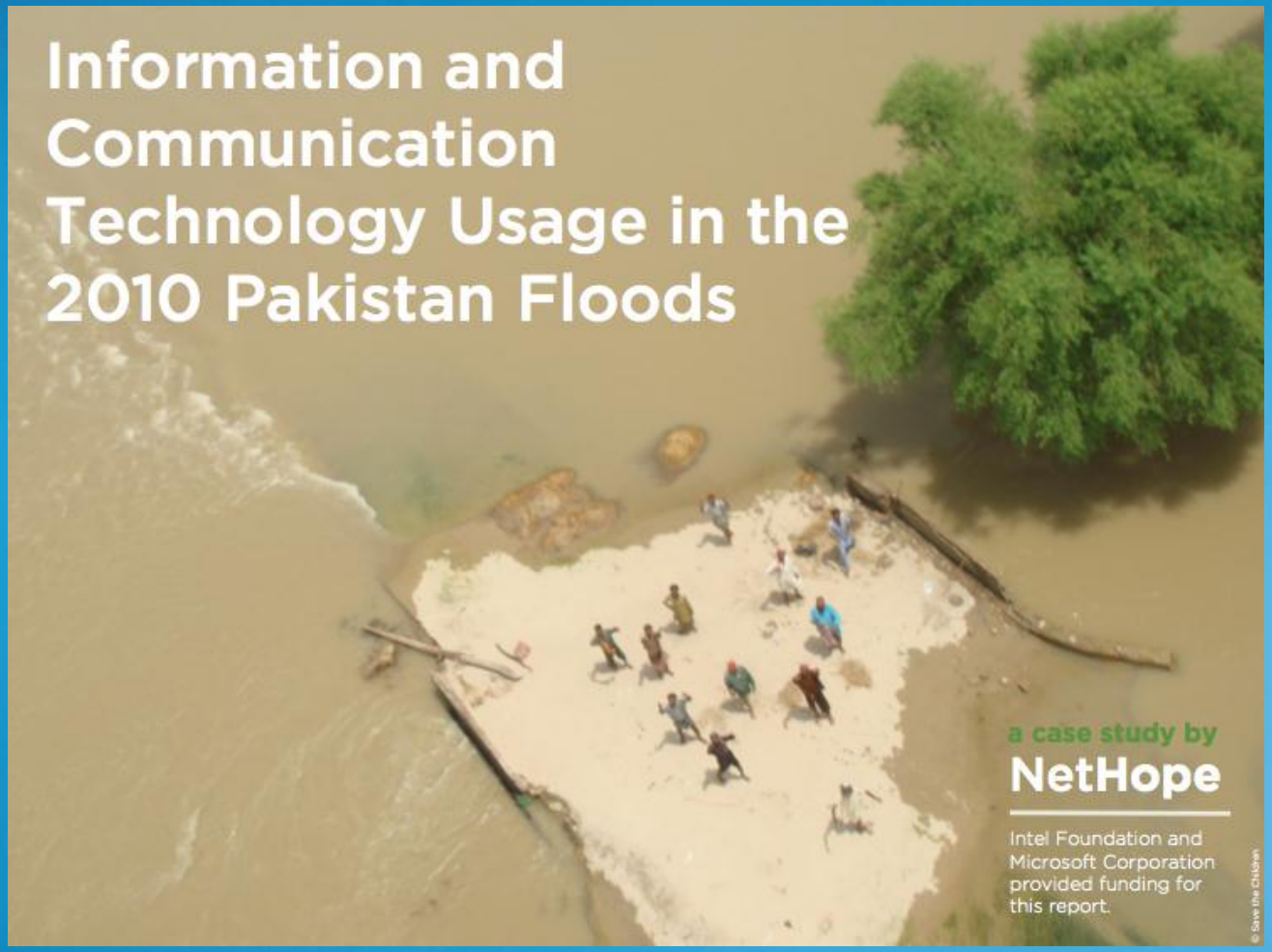
CISCO™

SMS Alerting – Haiti Cholera Outbreak

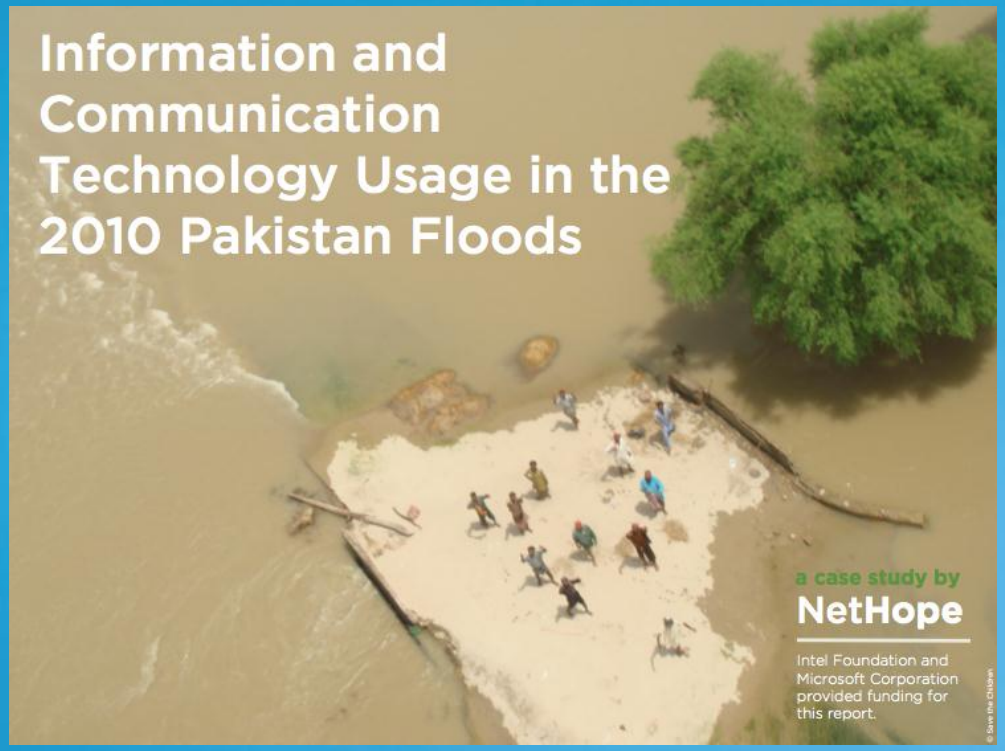
International Federation
of Red Cross and Red Crescent Societies

Voila

Technology PLUS Human Factors

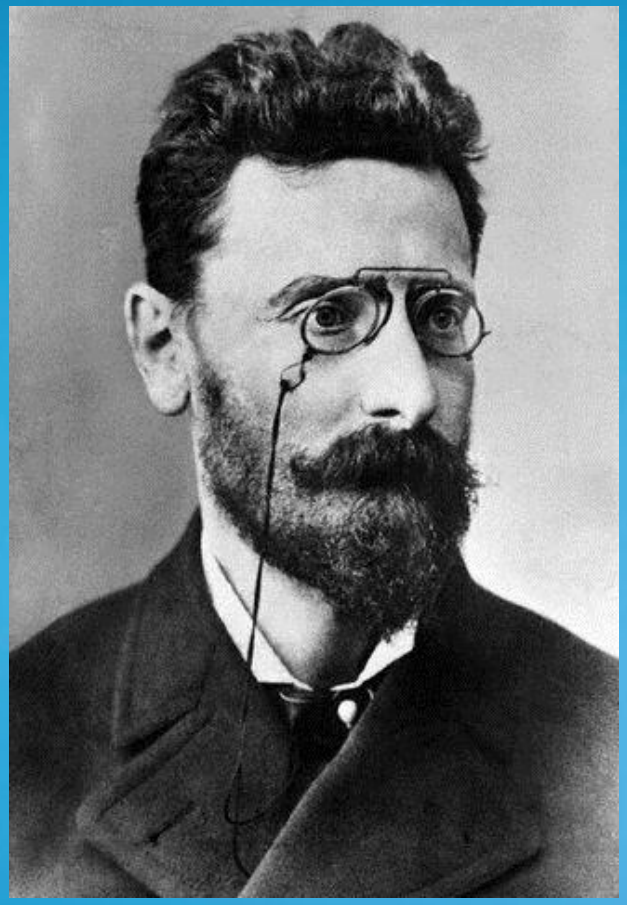


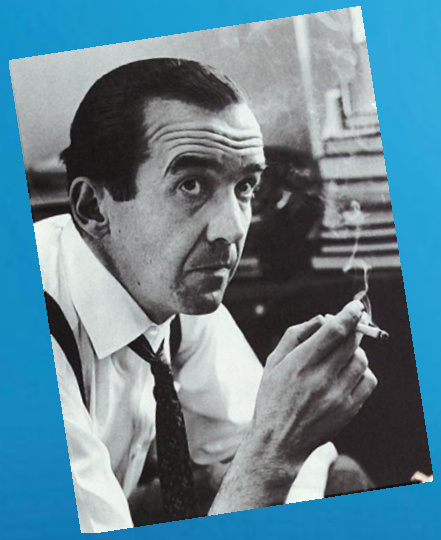
NetHope Report on Pakistan
www.nethope.org



Funded by Intel Foundation and Microsoft Corporation

The Untold Stories





The Untold Stories

- Response Spending = 30X Preparedness
- Tyranny of the Pie Chart
- Rich Collaborations
  - NetHope
  - NetHope and UN
  - NetHope and the Private Sector

This Is NetHope

Supporters

accenture
High performance. Delivered.
Adobe
Baker & McKenzie
Blackbaud
CDW
Cisco
ESRI
Fidelity Charitable Gift Fund
hp invent
intel
Microsoft
Michael & Susan Dell Foundation
The Rockefeller Foundation
USAID From the American People
Bill & Melinda Gates foundation
Waggener Edstrom Worldwide

Programs

- Connectivity
- Emergency Response
- Field Capacity Building
- Innovation For Development
- Shared Services

Members

The Nature Conservancy
CRS Catholic Relief Services
World Vision
Plan
Concern worldwide
Wildlife Conservation Society
Save the Children
fhi
care
ACCION
VSO Sharing skills Changing lives
Children International
Oxfam
ChildFund International
Ashoka
Pact
Heifer International
CHF International
Habitat for Humanity
SOS Children's Villages International
Relief International
WaterAid
christian aid We believe in life before death
MercyCorps
actionaid international
Opportunity International
International Rescue Committee
PATH
FINCA
Winrock International
International Federation of Red Cross and Red Crescent Societies

Beneficiaries

RESPONSE DEMOS AT SHOWCASE

MERCY CORPS

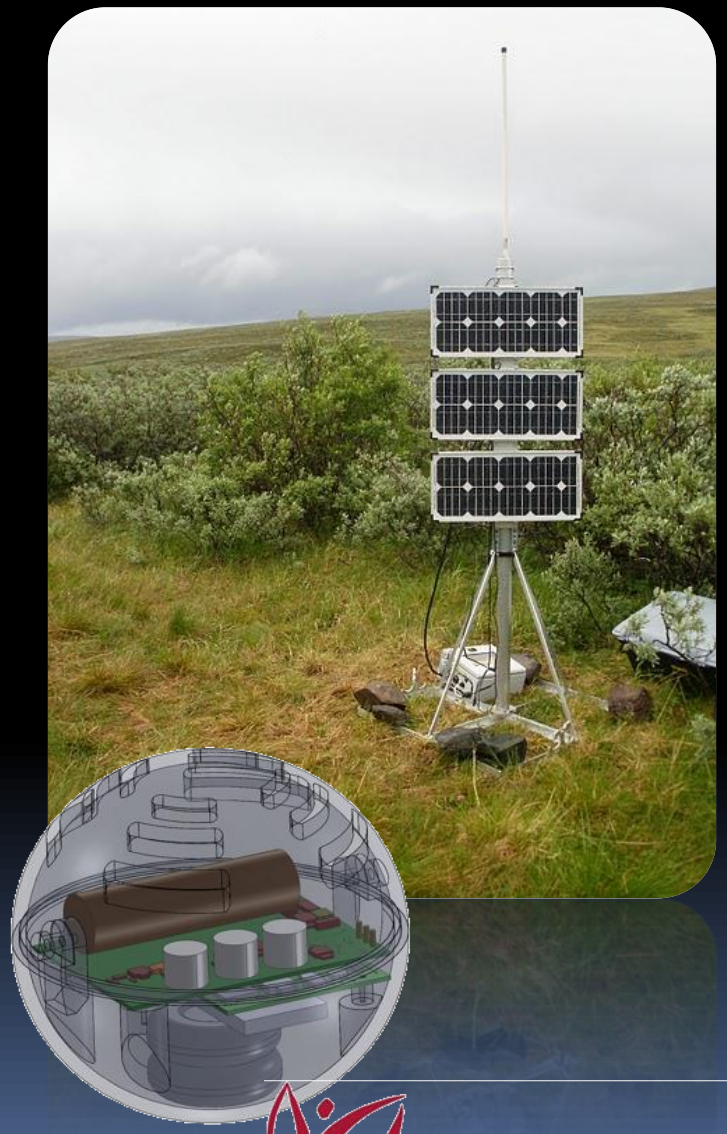
Continuous Sensing for Disaster Warning & Response

Connectivity Provisions for Disabled Networks

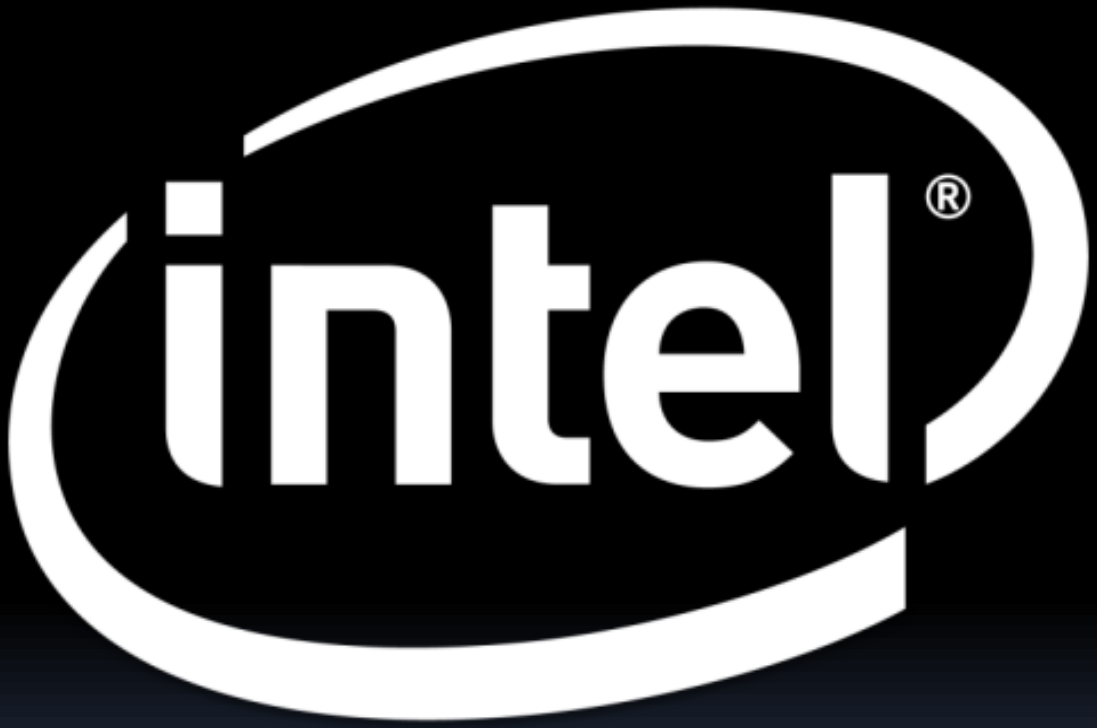
Reliable High Quality Video for Remote Medical Providers

Airborne Radar for Emergency Traffic Management

Energy Management for Distressed Power Grids



MercyCorps


intel

Q & A

Keri Carkeek
Eco-Technology Strategist
Intel Corporation

Perry Olson
IT Risk & Security Mgt
Intel Corporation

Bob Marshall
President & CEO
Earth Networks

Michael Bowers
Senior Director
Strategic Response & Global Emergencies
Mercy Corps

Frank Schott
Global Program Director
NetHope

THANK YOU

Michael Bowers, Mercy Corps

Senior Director Strategic Response & Global Emergencies,

Michael Bowers is senior director of strategic response and global emergencies for Mercy Corps, an international humanitarian and development agency. In this capacity, he is responsible for increasing competitiveness, enhanced quality and accountability in leading and supporting emergency operations globally. From 1999-2006 Bowers was country director for countries including Afghanistan, Albania, Croatia and Kyrgyzstan. In 2007 he served as regional program director for Central, East and South Asia covering China, Mongolia and Pakistan among others. With Mercy Corps, he has directed the agency's activities in sub-Sahara Africa, the Balkans and Asia managing programs in health, shelter, agriculture and economic development. He is on the board of IMON, LLC, a microfinance bank in Tajikistan.

Prior to joining Mercy Corps, Bowers worked on civic education programs in West Africa for the National Democratic Institute and ARD, Inc., a consulting firm.

Bowers received a bachelor's degree in art history from the University of Iowa and a masters in international program management from the School for International Training. He has testified on various topics related to international affairs and public policy in the United States and Europe.

Keri Carkeek, Intel Corporation

Eco-Technology Strategist

Keri works as an Eco-Technology Strategist in the Eco-Technology Program Office to develop businesses that use technology to address environmental issues.

Keri began her career in the Water Rights Adjudication office of the Washington State Department of Ecology. She went on to work as a private consultant on Department of Defense contracts for a wide variety of environmental and process improvement projects while occupying an office at the Environmental and Natural Resources Division at Fort Lewis.

Keri joined Intel Corporation in 1997 as a program manager for the development of server and workstation chipsets which was followed by operational management positions. Next she worked as the Technical Assistant to two vice- presidents. Returning to a professional focus on environmental sustainability she held the position of Chief of Staff for the Corporate Vice President managing the Corporate Sustainability Group which was responsible for aligning Intel's global environmental strategy.

Keri graduated with a Bachelor of Arts from The Evergreen State College in Olympia, WA where her educational pursuits were equally divided between the arts and sciences.

Bob Marshall, Earth Networks

President & CEO

Bob co-founded Earth Networks by pioneering the networking of weather sensors using the internet. Under Bob's leadership, the company has grown to operate the world's largest weather observation and lightning detection networks. Today, the company is "Taking the Pulse of the Planet" with global network expansion, including the measurement of greenhouse gases.

Bob's awards from the DC tech community include *Technology Visionary,* and one of the 100 top *Tech Titans.* He is a graduate of the University of Maryland College of Engineering, who has lauded him Outstanding Alumnus.

Earth Networks Observations from Earth Networks inform and alert consumers, enterprises and governments around the world, providing them with advanced environmental intelligence for decision making and safety.

Perry Olson, Intel Corporation

IT Information Risk & Security Manager

Perry Olson brings years of IT and security management experience to his current role as Manager of Intel's IT Information Risk and Security Management organization. He and his team are responsible for a broad range of Intel's information security-related programs, including technical risk and controls analysis, training and awareness, and security policy formulation and guidance.

Most recently, Olson led Intel's Enterprise Information Security Operations (EISO) team that is responsible for all operational security functions for Intel IT. The EISO team represents the front line of the information security perimeter in securing Intel's global computing environment .

Olson has been with Intel since 1987. Earlier roles at the company included positions of increasing responsibility in finance, materials, product planning, and mergers and acquisitions.

He earned a B.S. degree in finance from Utah State University.

Frank Schott, NetHope

Global Program Director

Frank Schott has spent almost 25 years in the technology sector. Since 2005, Frank has served as a NetHope Global Program Director in charge of the Field Capacity Building and Emergency Response initiatives. During his time with NetHope, Frank has worked closely with member agencies, corporate partners and NetHope staff to design, develop and deliver ICT related programs which are shared by the humanitarian sector.

Prior to joining NetHope, Frank worked with public and private sector clients developing programs and solutions around the use of technology in the developing world. His client list includes UNHCR (the UN Refugee Agency), the University of Washington, Naguru Teenage Medical Centre and Microsoft Corporation. His developing world experience is “hands on” with time spent on programs in Africa, Southeast Asia, Central America and Eastern Europe.

Frank worked for ten years at Microsoft Corporation in a variety of general management product and sales positions in Redmond and Paris. Prior to that, Frank worked for a variety of software startups in various executive level capacities.

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