



Saving Lives and Protecting Property in the Caribbean



Presenter

John de Denghy

Business Development, Americas

Advanced Environmental Monitoring



A Family of Innovative Environmental Brands.

370+ years of Combined Expertise | 400 Industry Experts



Total lightning network,
early warning and
forecasting



Precision weather and
climate monitoring
systems



Sensors and software for
agriculture and crop
management



Flood warning
hydrological monitoring
and alerting



Wildfire
situational
awareness



End-to-end solutions for capacity building in meteorology and hydrology

The AEM family of companies deliver real-time environmental monitoring, decision support, and operational resiliency.



Early Warning System Provider to National and International Organizations

Philippines




PAGASA

Brazil



INPE

Japan



JMA

United States



NOAA/NWS

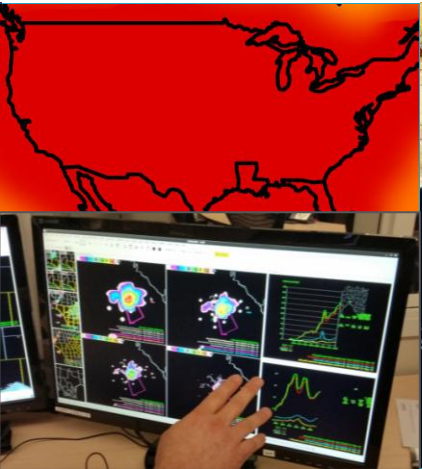
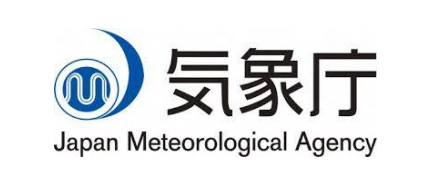
India



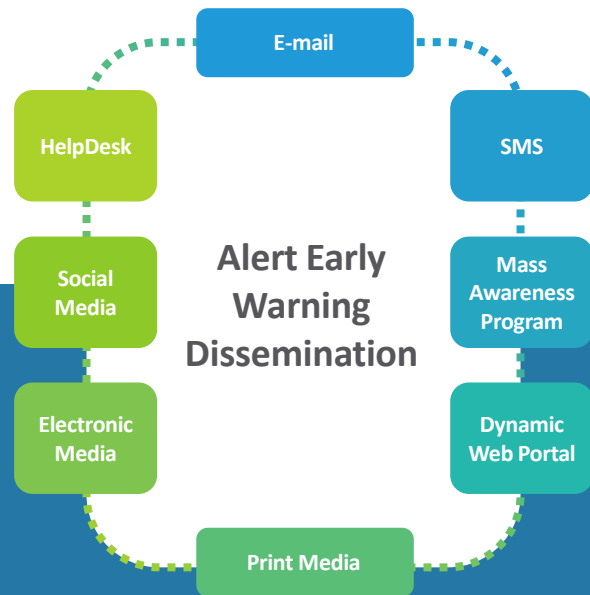
MOD, MOES, States of West Bengal, Karnataka, and Andhra Pradesh

UNDP

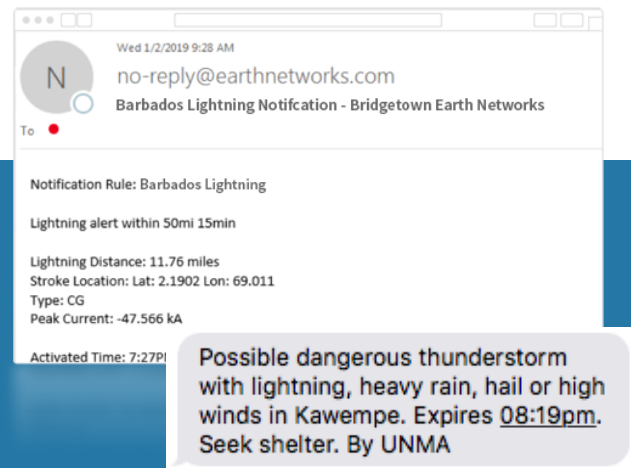
Chile, Uganda, Liberia, Sierra Leone, The Gambia, Guinea



Enabling Public Alerts and Warnings



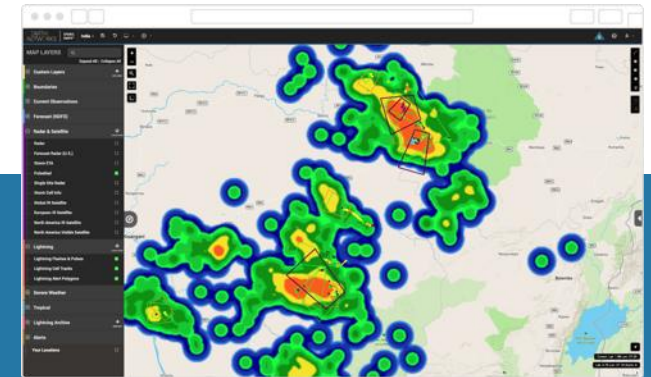
Early Warning Communication:
WhatsApp group, and flash messages/SMS to mobile phone users and via email.



Communications from NMHS:
Via WhatsApp messaging system, phone calls, TVs, Radio, Near Real Time Location Based Alert System.



Earth Networks Outdoor Alerting System:
Warning of lightning within predefined parameters using an audible horn.



Earth Network's Pulse Rad Radar:
Identify approaching thunderstorms in regions not suited for adequate radar coverage.

Source: Earth Networks

Caribbean Early warning Program

The Caribbean region is frequently impacted by severe storm events

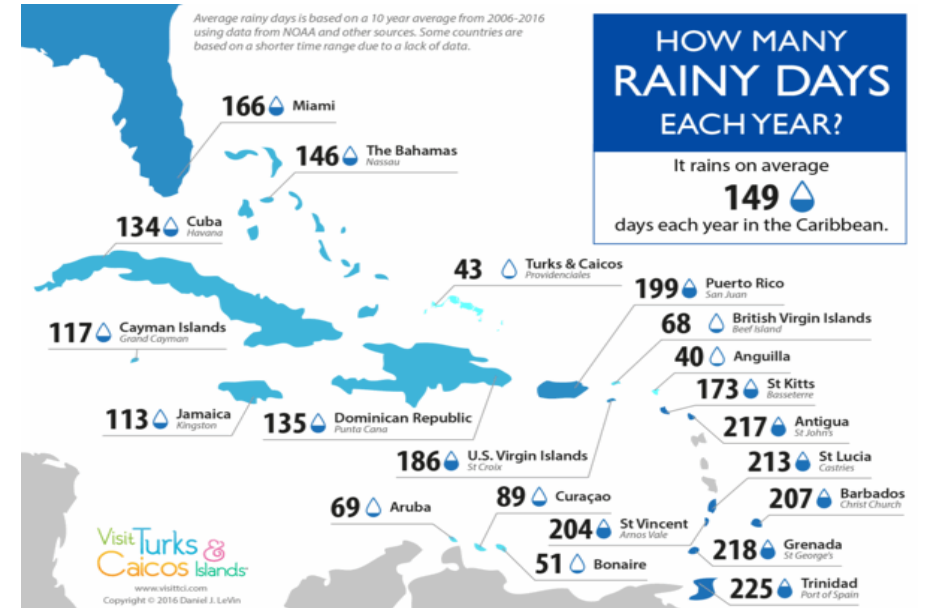
- This Affects:
 - Population
 - Infrastructure
 - Agricultural Production
 - Availability of fresh water

AEM has developed technology that allows users to gather very precise data

- Dangerous Thunderstorms
- Lightning Proximity & Intensity
- Precipitation insights beyond conventional radar (PulseRad)

AEM's Program:

- Can be implemented:
 - Large and Small Islands
 - Limited or Well-Developed Infrastructures
- Program is driven by end-user needs including:
 - Severe Weather Monitoring
 - Forecasting
- Cost is a fraction of traditional systems



Early Warning Program Components

Deployment of Regional Network

- Total Lightning Network™ sensors
- Automated Weather Stations (AWS)
- Hydrometeorology Sensors

Integration

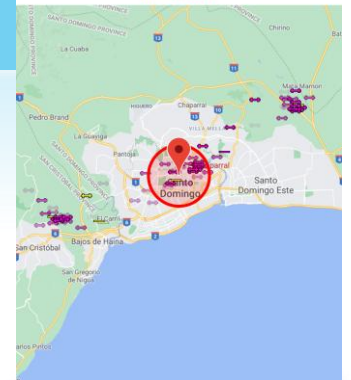
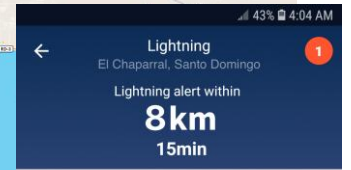
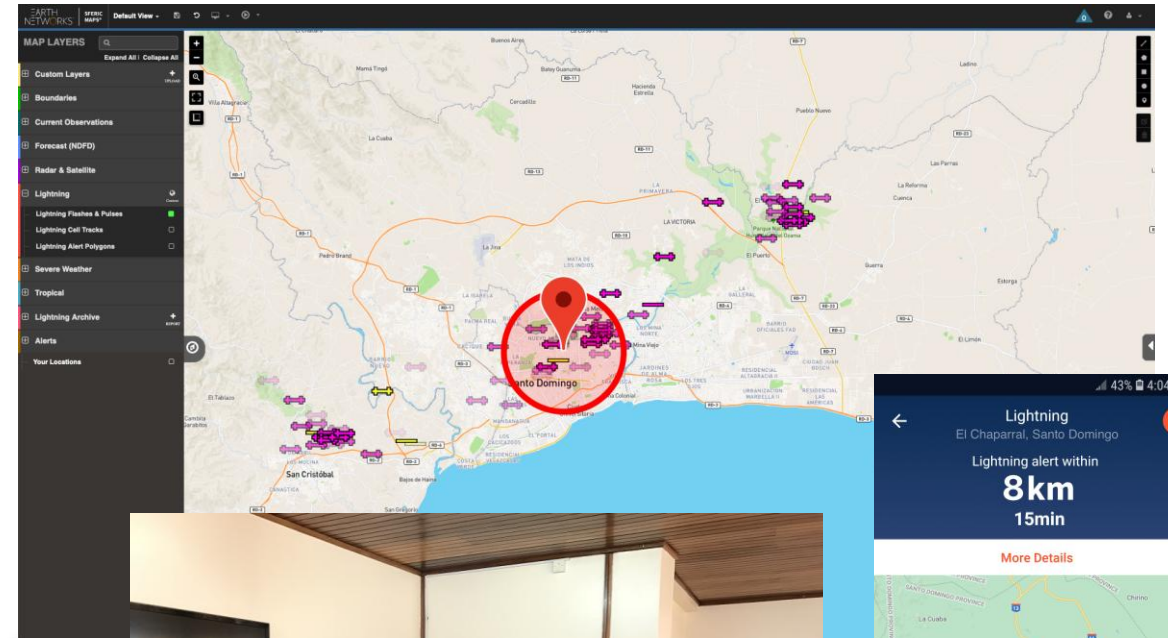
- Dangerous Thunderstorm Alerts (DTA)
- PulseRad synthetic radar & precipitation monitoring data
- Existing layers into Contrail

Delivery

- Severe Weather Alerts & Forecast information via:
 - SMS, Mobile Apps, Websites
 - APIs, Visualization platforms

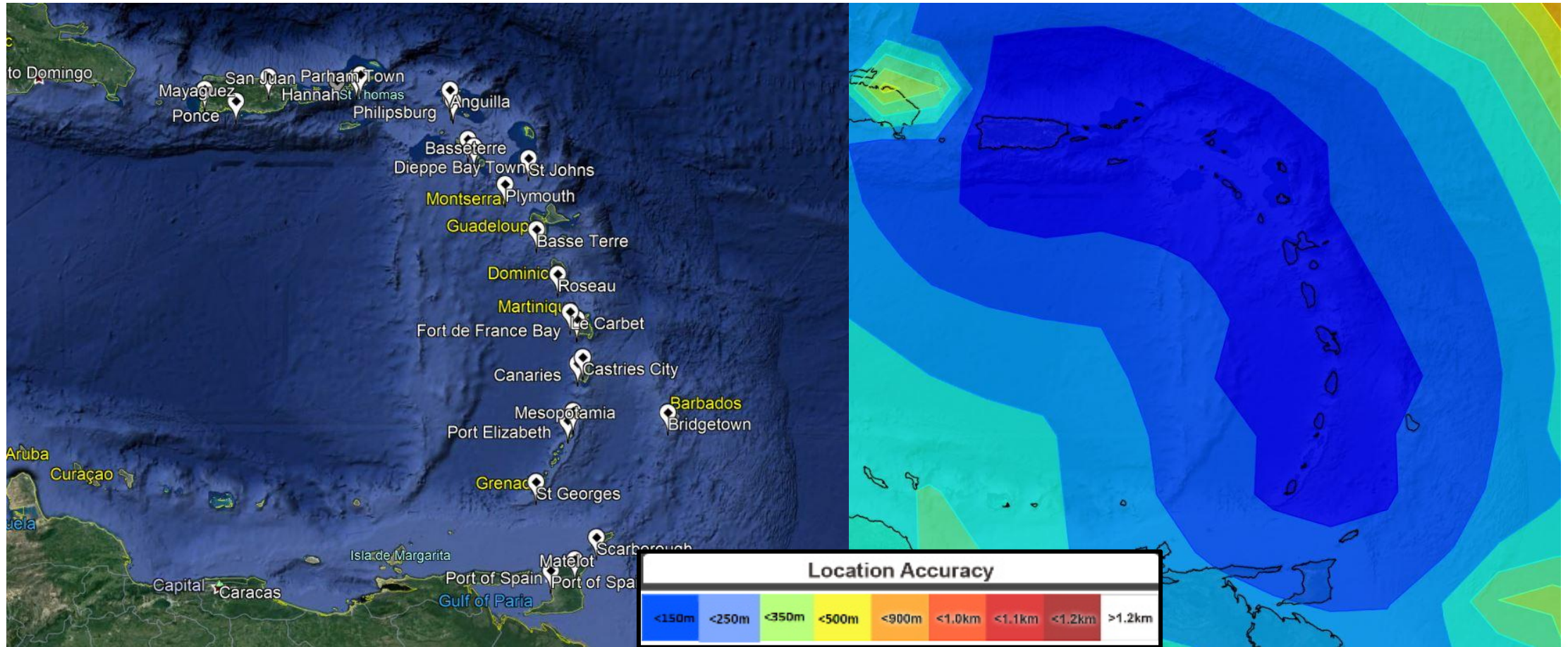
Technology Transfer

- Ongoing deployment, maintenance and training services to enable capacity building within institutions



Caribbean Network Design

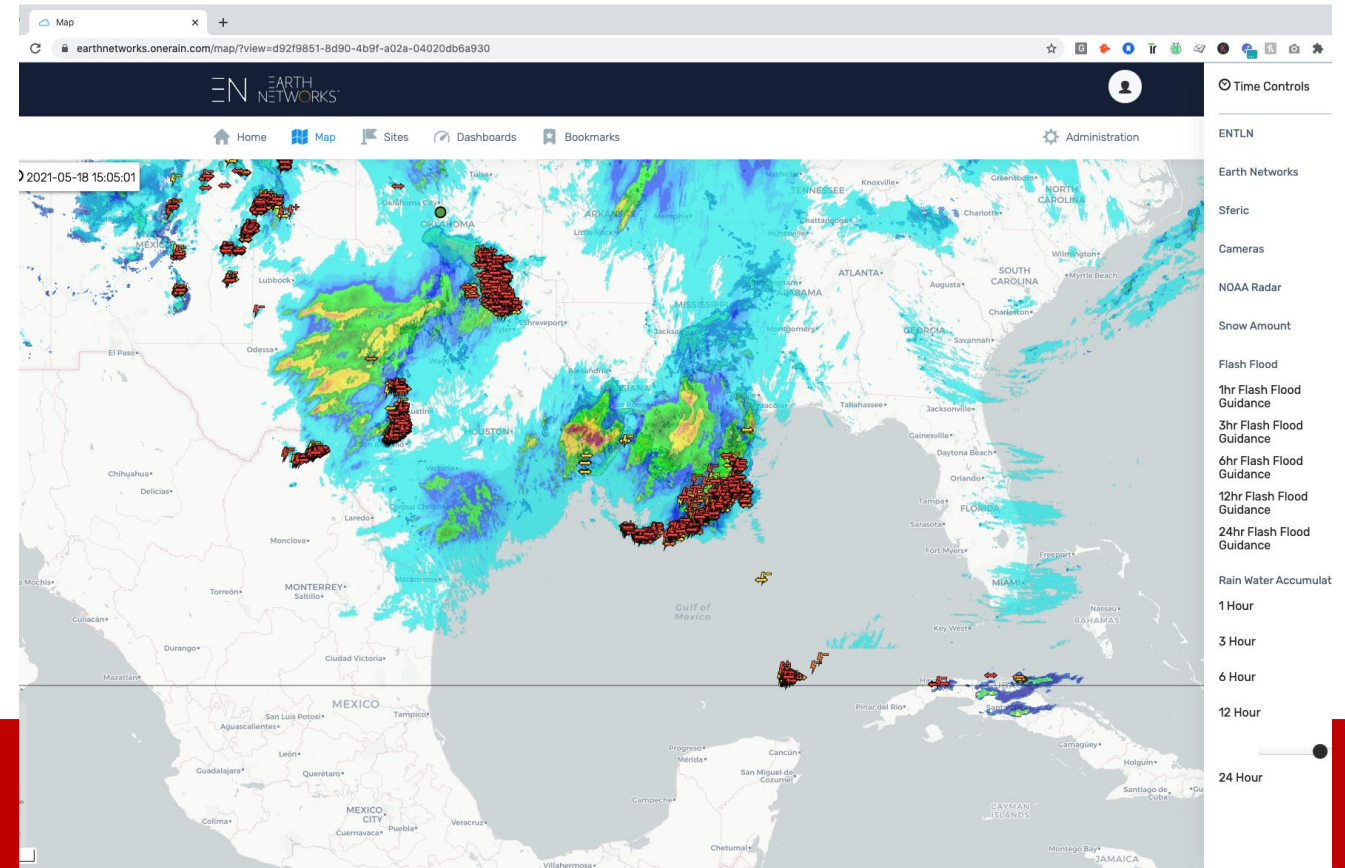
Optimized Design for Total Lightning Network



AEM Caribbean Network

Network Development Plan

- Long- range lightning detection sensors
- Local partnerships to ensure transfer of knowledge, sustainability of network
- Raw Data & Visualization Tools/Alerting
- Optional Scale-Up
 - Rainfall monitoring
 - Flooding and planning resilience
 - Early Warning Systems for Flooding



MORE THAN 45 MINUTES ADVANCE WARNING FOR DANGEROUS THUNDERSTORMS AND POTENTIALLY DAMAGING WEATHER EVENTS.



Earth Networks Sferic Siren installation in Odisha

INDIA: Odisha State Disaster Management

- Storm-tracking and visualization software
- Lightning proximity alerting
- Dangerous Thunderstorm Alerting
- 14 Automated Lightning Warning Systems installed throughout villages
- 4,084,820 Lightning strikes detected in 2020
- 2,788 Dangerous Thunderstorm Alerts issued in 2020

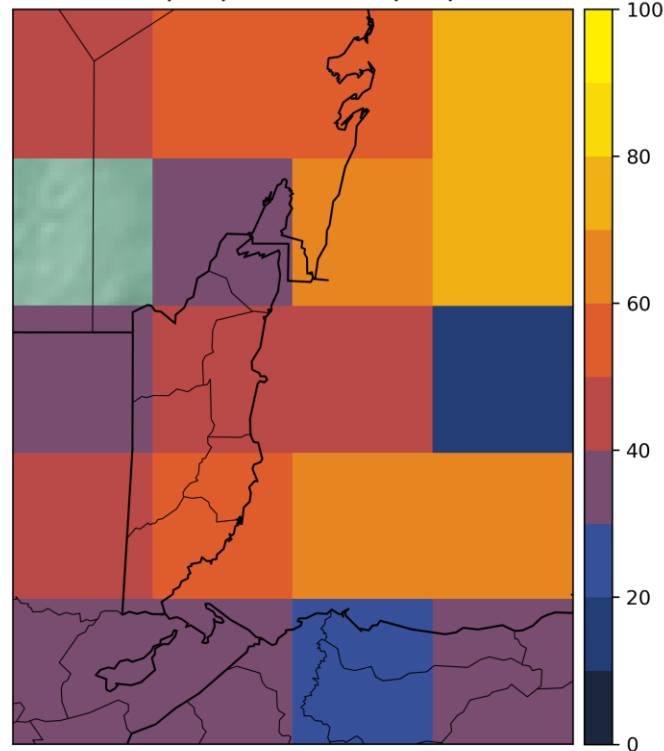


**30% REDUCTION IN DEATHS
DUE TO LIGHTNING IN ODISHA**

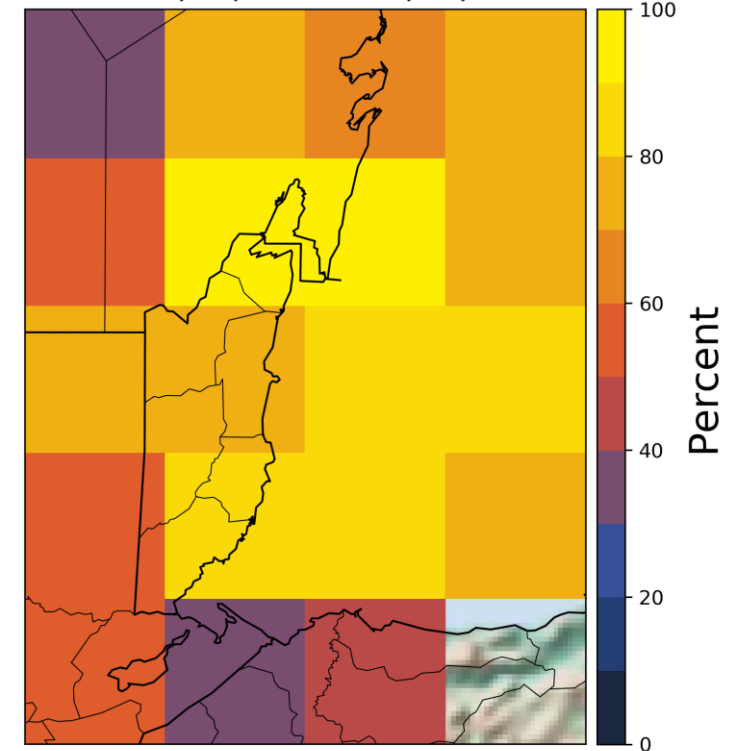
Belize: Belize Electricity Limited (BEL)

- BEL awarded EN contract to build a high-resolution network in Belize in 2019.
- Severe Weather Warning System:
 - Total lightning detection network with addition of 6 sensors
 - Storm tracking
 - Severe weather alerting
 - Data used by Electric Utility Sector to spot outages

ENGLN DE Relative to GLM-East Flash
2019/01/01 - 2019/01/31



ENGLN DE Relative to GLM-East Flash
2020/01/01 - 2020/01/31





Thank you!

Questions & Comments

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