

# Business Continuity Overview

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LUMEN<sup>®</sup>

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## Executive summary

Lumen is committed to business resiliency and survivability during an incident or business disruption. Our Corporate Business Continuity Management program (“program”) supports an environment of prevention, collaboration, communication, response, and recovery, ultimately allowing us to serve customers, shareholders and employees in the face of disruptive events.

As one of four core members of the Communication Sector Coordinating Council partnering with the Department of Homeland Security National Coordinating Center (NCC), it is of paramount importance for Lumen to protect the operation of our company and our customers’ business.

This document summarizes Lumen’s BCM program and its resiliency and preparedness capabilities.

## Program goals

The program supports Lumen’s vision, strategy, and corporate objectives with the following goals. Annually:

- Evaluate the purpose and operations of every business unit in the company, identifying threats, hazards, and potential impacts to critical business priorities
- Develop strategies for mitigation, continuity, and recovery
- Maintain uninterrupted service whenever possible, and when necessary, coordinate recovery from business disruptions safely and quickly
- Enable continuous improvement by periodically reviewing program strategy and performance.

## Program governance

**Standards:** Lumen has aligned its program to adhere to ISO 22301:2012, the International Standard for Business Continuity Management (BCM).

**Leadership:** Lumen’s highest-level executives support the program by assigning program partners to represent their organization’s interest in operational resiliency.

**Policy:** In adherence to our company policy, Lumen is committed to maintaining a Corporate BCM team, framework, program objectives, and assignment of resources to execute the program. The BCM program policy is reviewed and updated on an annual basis.

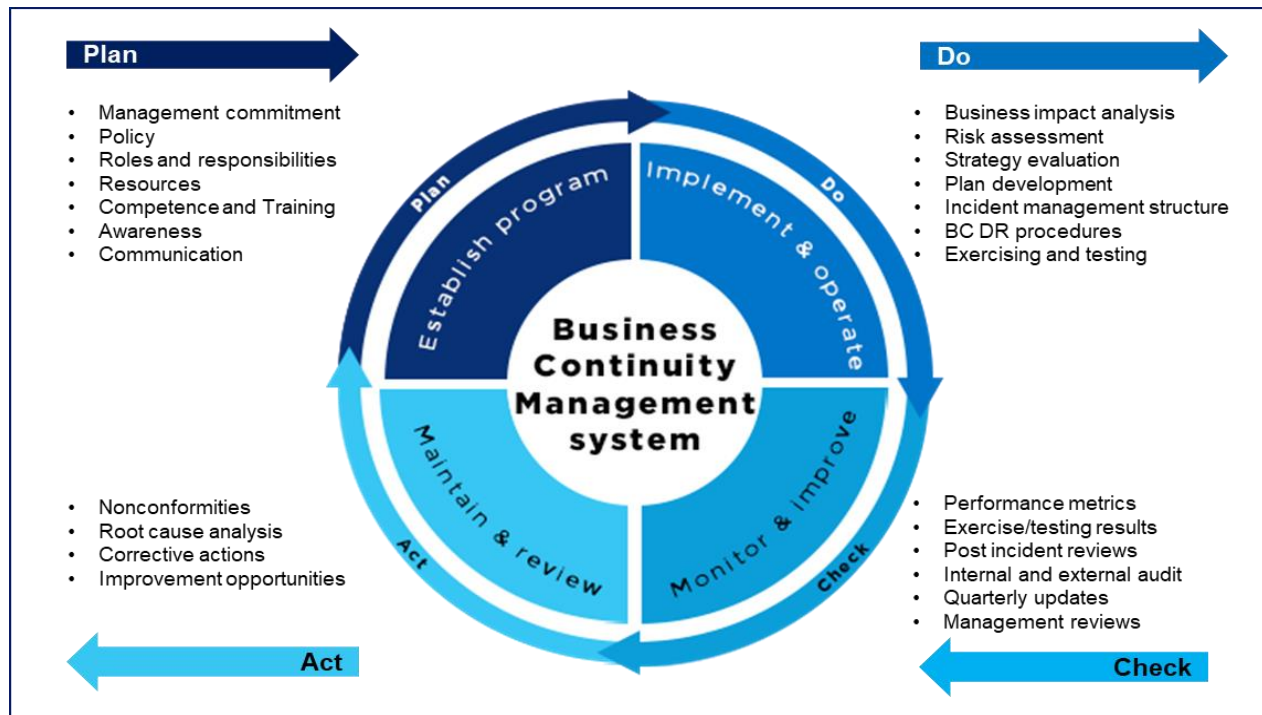
**Metrics:** The Corporate BCM team maintains a dashboard to monitor and evaluate the performance of program activities.

**Audit:** Lumen engages internal and external audit firms to perform multiple types of assessments designed to address our customers’ diverse compliance requirements.

## Program framework

As supported by policy, the key to resiliency is the program's framework. In alignment with ISO 22301:2019.

Lumen's BCM program is based on a Plan-Do-Check-Act model comprised of the following key components:



## Establish program

- **Program management:** Dedicated resources establish accountability and reinforce Lumen's commitment to the business continuity standards required to provide customers reliable and resilient service.
- **Competence, training & awareness:** The program utilizes role-based training curriculum to help ensure participants are competent to the responsibilities for executing required tasks.

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## Implement and operate

- **Business impact analysis (BIA):** Annual interviews are conducted to identify the company's key operational functions and the impact(s) a disruption would have on them. This analysis provides an understanding of time-critical priorities, key resources, and interdependencies so that recovery time objectives (RTO's) can be established, approved, and integrated into planning strategies.
- **Risk assessment (RA):** Annual interviews are conducted to evaluate threats, hazards, and potential causes of interruptions, the probability of their occurrence, and the severity of their impact when they occur.
- **Strategy evaluation and plan development:** The BIA and RA collectively provide data integral to evaluating, developing, and implementing strategies for reducing the likelihood and impacts of disruptive incidents.
- **Incident management and business continuity/disaster recovery plans:** The incident management process and BC/DR plans provide procedures for maintaining continuity of operations and are implemented to effectively respond to and recover from company-wide operational disruptions.
- **Exercising and testing:** To test viability and develop a state of readiness, Lumen requires critical plans to be updated and exercised annually.

## Monitor and review

- **Tracking performance metrics:** The progress of each organization's compliance with the program objectives and requirements is continually tracked and communicated to key program personnel on a quarterly basis.
- **Post incident reviews (PIR):** Provide impacted/activated groups an opportunity for recovery process feedback, reflection on lessons learned, and address any issue(s) which may require follow-up action.
- **Management reviews:** Conducted annually or when significant business changes occur, to review the state of the program and confirm alignment with company strategy and operational initiatives.

## Maintain and improve

- **Non-conformities, corrective actions, and improvement opportunities:** Are tracked and periodically reviewed to address findings or gaps are addressed and to enable continuous improvement of the program.

## Key plan elements

While business continuity plans are proprietary, Lumen uses a company-wide planning model that incorporates information as outlined in the plan's Table of contents below:

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## Program roles and responsibilities

Roles	Responsibilities
<b>Corporate business continuity management office</b>	<p>Lumen's program is managed by full-time business continuity professionals who govern and support the corporate BCM program. Responsibilities include:</p> <ul style="list-style-type: none"> <li>• Developing and maintaining the program methodology and framework for recovery of business operations, facilities, applications, and the incident response structure</li> <li>• Maintaining a BCM Guidebook containing the detailed procedures for how to execute the components of the program</li> <li>• Facilitating Incident Management activities, to include: <ul style="list-style-type: none"> <li>– developing and maintaining program structure and processes - team membership, role-based training, and exercises</li> <li>– facilitating and managing event communications with interested parties</li> <li>– conducting Post Incident Reviews and tracking action items to closure</li> </ul> </li> <li>• Tracking and reporting execution results to determine recoverability and maturity</li> <li>• Directing and supporting continuous program improvements</li> <li>• Conducting reviews with management on BCM capabilities</li> <li>• Maintaining, managing, and administering the BCM-related tools (i.e. planning repositories, incident communications, training modules, etc.)</li> </ul>
<b>Senior leadership</b>	<p>Lumen's highest level of leadership, representing all major organizations of the company. Responsibilities include:</p> <ul style="list-style-type: none"> <li>• Championing the program and instilling the values of the program within the organization</li> <li>• Appointing an Executive Sponsor(s) to implement and execute the program framework within their organization and subsequent functional group(s)</li> <li>• Identifying unacceptable levels of BCM risk</li> </ul>
<b>Executive sponsors</b>	<ul style="list-style-type: none"> <li>• Accountability for the management, prioritization, implementation, and continuous improvement of the program in their functional groups/organizations</li> <li>• Appointing Business Continuity Coordinators (BCCs) and granting them the authority to coordinate execution of the program and verify their responsibilities</li> <li>• Appointing Incident Management Team Commanders to provide efficient command and control over recovery activities and concise communications to stakeholders</li> </ul>
<b>Business continuity coordinators (BCCs)</b>	<ul style="list-style-type: none"> <li>• Establishing the structure within their functional group to coordinate execution of the program</li> <li>• Obtain ongoing training and education necessary to design, implement, and maintain the program's desired execution outcome</li> </ul>
<b>Plan owners / incident commanders</b>	<ul style="list-style-type: none"> <li>• Responsible for the development, approval, and distribution of plans</li> <li>• Verifying plan recovery strategies are implemented, maintained, and exercised</li> <li>• Revising plans as business conditions require (i.e., changes in roles, environment, technology, or operations)</li> <li>• Assuming command over an appropriate response structure</li> <li>• Activating plans when pre-defined triggers have been met and recovering the critical activity within its desired timeframe</li> </ul>
<b>Plan builders</b>	<ul style="list-style-type: none"> <li>• Support Plan Owner in developing and maintaining plan(s) in the required planning repository</li> <li>• Assisting Plan Owner with any maintenance, exercise, and QA activities</li> </ul>





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<b>Incident management teams (IMTs)</b>	<p>IMTs are comprised of team members representing key functional groups that may serve a critical role during life safety incidents or business disruptions</p> <ul style="list-style-type: none"><li>• Primary team members are paged out for all activations and secondary teams are paged out if they are impacted or needed to support an incident</li><li>• Each team is accountable for the overall command, control, and communication within their functional group during recovery</li></ul>
<b>General employees</b>	<ul style="list-style-type: none"><li>• Complete program awareness training on an annual basis and other additional training as needed by periodic objectives, projects, or initiatives</li></ul>

## Managing and responding to an incident

### Defining an incident

Lumen defines an *incident* as a man-made or naturally occurring disruptive event where the impacts affecting its employees, assets, or critical business operations meet predefined activation triggers. Activation triggers would include, but are not limited to: life threatening situations (severe weather, natural disasters, pandemic epidemic, workplace violence), extended outages or security breaches for top critical systems or applications, or extended evacuations due to building infrastructure failures or environmental emergencies.

Weather/nature	Man-made	Equipment and infrastructure	Health and environment
			
<ul style="list-style-type: none"> <li>• Floods</li> <li>• Tornados</li> <li>• Hurricanes</li> <li>• Earthquakes</li> <li>• Ice/snow</li> <li>• Wildfires</li> <li>• Volcanos</li> </ul>	<ul style="list-style-type: none"> <li>• Workplace violence</li> <li>• Civil unrest</li> <li>• Work stoppage</li> <li>• Acts of terrorism</li> <li>• National security</li> <li>• Criminal behavior</li> </ul>	<ul style="list-style-type: none"> <li>• Extended outages</li> <li>• Equipment failures</li> <li>• Technology disruptions</li> <li>• Unsafe facilities</li> <li>• Security Breaches</li> </ul>	<ul style="list-style-type: none"> <li>• Pandemic</li> <li>• Epidemic</li> <li>• Hazardous materials</li> </ul>

### Activating incident management teams (IMTs)

Lumen IMTs are operational 24/7 and convene virtually when any member becomes aware of an actual or impending situation within their support area. Incident Commanders are engaged to determine if the incident has met an activation trigger or threshold. If the situation warrants, the Incident Commanders coordinate the activation of the team and the necessary notifications. The IMT(s) reconvene at agreed upon time intervals to provide status updates on their team's tactical recovery and any resources or logistics requirements. Incident Status Reports are updated and distributed after each meeting and disseminated appropriately to top management, functional groups, and other interested parties. A post-incident review incorporating lessons learned and after-action items from all activated teams are created to track action items to closure.

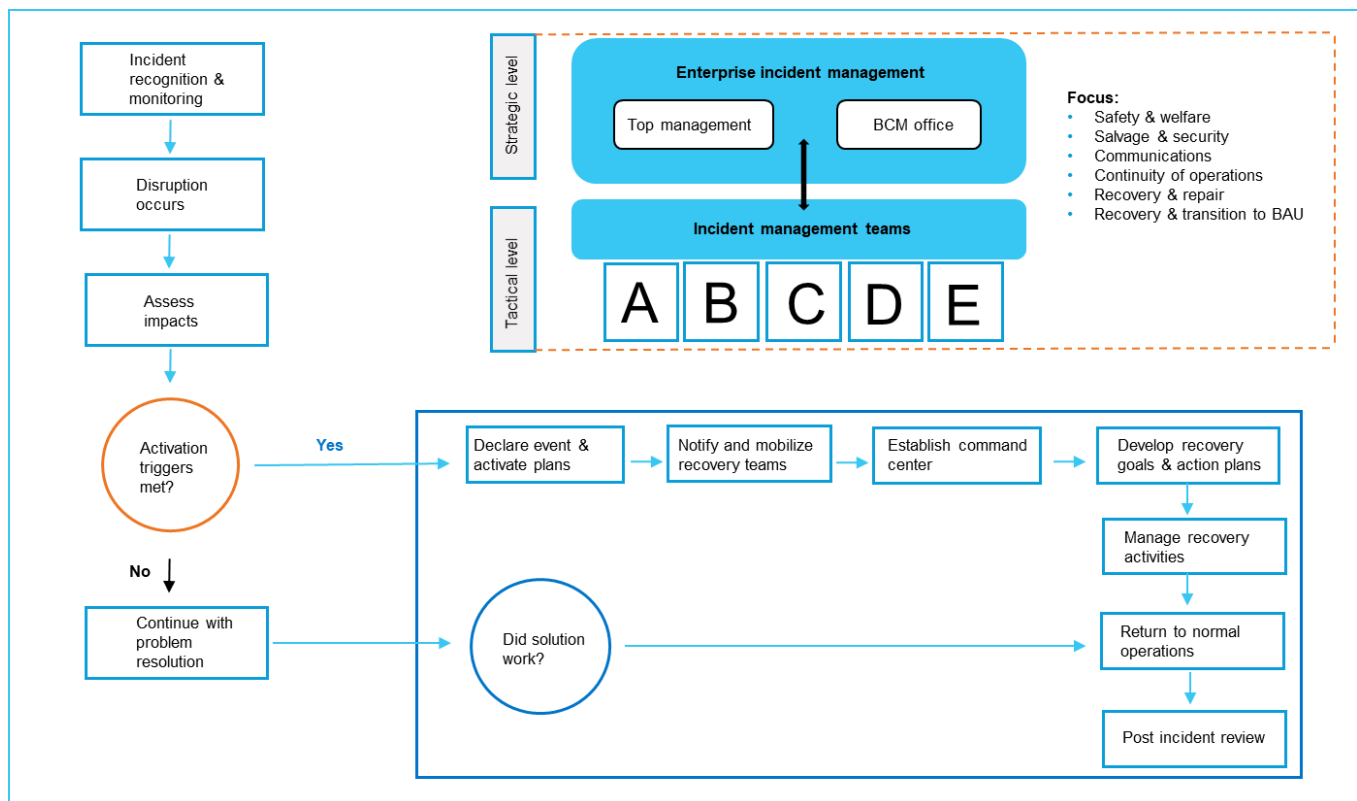


## Communicating during an incident

Lumen implements redundant communications capabilities utilizing alternate carriers. Primary and back-up conference bridges are supplied by separate vendors using diverse networks and routes. The company owns and maintains an automated paging system, utilized for activating its Incident Management teams and notifying registered employees of disruptive events or critical situations. Additionally, in times of network congestion or domestic emergencies affecting normal telecommunications means, Lumen critical personnel are afforded priority access through the Government Emergency Telecommunications Service (GETS) for public switch telephone networks (PSTN) and the Wireless Protection Service (WPS) for cellular phones.

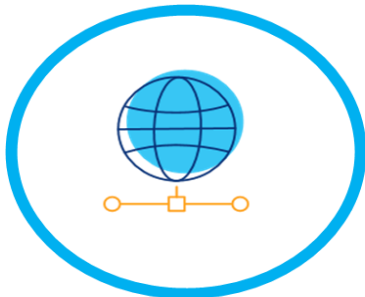
## Recognition, response, and recovery flow

The figure below illustrates how the incident management process unfolds and interested parties are kept informed.



## Resiliency and preparedness capabilities

As a leader in global communications and IT services, Lumen's preparedness capabilities and resiliency strategies include, but are not limited to:



**Network & IT  
infrastructure**



**Facilities**



**Personnel**

## Network & IT infrastructure

### Network footprint

Lumen serves customers in more than 60 countries across the globe, with network and fiber capabilities that connect more than 350 metropolitan areas with 100,000-plus on-net buildings. This globally diverse network, including approximately 450,000 route miles of fiber, enables a broad range of services and solutions to meet customers' evolving demands for capacity and reliable connectivity.

### Network reliability

Geographically dispersed network operations centers are staffed 24/7/365 to monitor, identify, and isolate causes of potential network disruptions, and coordinate resolution of system outages. During a network outage or event, this may include opening event tickets, tracking and correlating events, running event bridges when required, and providing status to interested parties.

### Network security

To support the security of the company's information and networks, Lumen utilizes a team of subject matter experts with diverse technical expertise from Operating Systems, Web Applications, Networking, Computer Forensics and Cryptography. These investigation and response capabilities are maintained 24/7/365 to protect Lumen assets from cyber threats.

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## IT operations

Lumen owns and manages geographically dispersed data centers, which are equipped with infrastructure, environment and connectivity to support the company's processing capabilities, and essential business functions. Access to data centers is restricted and backed up by battery and generators when commercial power is disrupted. Information Technology (IT) partners with BCM program personnel to provide management recovery plans for critical applications and hardware, as well as integrating communication activities during an incident.

## Facilities

All critical facilities have plans for recovering their critical infrastructure from loss of access, power, HVAC, etc. Periodic inspections and evacuation drills are conducted to protect the safety of our employees, customers, and vendors.

## Fire and life safety

Lumen is committed to the safety of its employees and guests, protecting company assets, providing continuity of company operations, and complying with applicable regulations and codes. Fire and Life Safety plans and subsequent procedures are customized according to each facility.

## Corporate security

The Corporate Security group establishes security policies, manages access control systems, and coordinates security improvements to Lumen properties. This group manages the 24/7 Security Command Center which responds to alarms, monitors video, monitors global events, supervises security officers, and serves as the central point of contact for all security related events.

## Alternate work arrangements

During a disaster or emergency related event, Lumen utilizes an alternate workspace process and team to address the needs of business units which occupy impacted facilities. Additionally, Lumen deploys remote access strategies providing the ability for employees to work remotely in support of minimizing the impact to customers during disruptive events.

## Personnel

With personnel located around the globe, Lumen has incorporated into its planning a methodology to address potential or significant disruptions in staffing levels, focusing on the following areas:

- Keeping mission-critical functions operational
- Personnel remote access and staff reduction contingency strategies
- Providing an appropriate level of awareness for our employees and customers
- Anticipating and responding to our customers' needs and possible disruptions to our supply chain

## Health and safety

Lumen is committed to protecting the health and safety of our employees, customers, and communities we serve by conducting our business in a safe and environmentally responsible manner. Health risks and/or pandemic preparedness are integrated into the planning process of the Business Continuity program, where health and safety policies and staff provide support and guidance during significant business disruptions or disasters.

## Suppliers and vendors

To minimize risk and provide supplier accountability, multiple Lumen groups collaborate for negotiating and executing the contractual agreement terms of sourced products and/or services. This provides Lumen the ability to assess the control measures of our suppliers, vendors, business partners and resiliency strategies are adequately implemented to address service level commitments and continuity of operations.

Customers