



ATIS-0100018(2021-02)

ATIS Standard on -

**NETWORK RELIABILITY STEERING COMMITTEE (NRSC)
PANDEMIC CHECKLIST**



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ATIS-0100018(2021-02), *Network Reliability Steering Committee (NRSC) Pandemic Checklist*

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Network Reliability Steering Committee (NRSC) Pandemic Checklist

Alliance for Telecommunications Industry Solutions

Approved February 8, 2021

Abstract

In 2009, the NRSC compiled a checklist of voluntary industry Best Practices and relevant links to be used in preparation for a pandemic event. This document represents the addition of applicable Best Practices in response to the Ebola outbreak in 2014-2015 and the restructuring and subsequent development and addition of new Best Practices in response to COVID-19 in 2020.

Foreword

The Alliance for Telecommunications Industry Solutions (ATIS) serves the public through improved understanding between carriers, customers, and manufacturers. The Network Reliability Steering Committee (NRSC) strives to improve network reliability by providing timely consensus-based technical and operational expert guidance to all segments of the public communications industry. As a trusted expert, the NRSC addresses network reliability improvement opportunities in an open, noncompetitive environment. The NRSC advises the communications industry through developing and issuing standards, technical requirements, technical reports, bulletins, Best Practices, and annual reports.

Suggestions for improvement of this document are welcome. They should be sent to the Alliance for Telecommunications Industry Solutions, NRSC, 1200 G Street NW, Suite 500, Washington, DC 20005.

At the time of consensus on this document, Network Reliability Steering Committee (NRSC), which was responsible for its development, had the following leadership:

Carolyn Brown, NRSC Co-Chair (Lumen)

Andis Kalnins, NRSC Co-Chair (Verizon)

The **Best Practices** Subcommittee, which was responsible for the development of this document, had the following leadership:

Robert Desiato, NRSC Best Practices Co-Chair (AT&T)

Thomas Smith, NRSC Best Practices Co-Chair (Comcast)

ATIS-0100018 Document Revision History

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ATIS-0100018(2021-02), *NRSC Pandemic Checklist*, Published 2021

Phase	BP #	<div> <div>Network Operators</div> <div>Service Providers</div> <div>Equipment Suppliers</div> <div>Public Safety</div> <div>Property Managers</div> <div>Government</div> </div>							Task	Completed
Preparation			X	X	X	X	X	X	Understand and educate employees on the nature of the risk and the potential means by which it could directly affect the following:	
Preparation			X	X	X	X	X	X	§Operations	
Preparation			X	X	X	X	X	X	§Resources	
Preparation			X	X				X	§Reputation	
Preparation			X	X	X	X	X	X	§Financial Health	
Preparation									Review existing corporate preparedness plans, procedures and policies, including the following:	
Preparation			X	X		X		X	§Communication capabilities	
Preparation					X		X		§Critical suppliers	
Preparation				X	X				§Potential sales impact	
Preparation			X	X	X	X	X	X	§Business continuity plans / Continuation of Operations (CoOp)	
Preparation			X	X			X		§Risk management controls	
Preparation			X	X	X	X	X	X	§Human resource policies	
Preparation			X	X	X	X	X	X	Should review, update, and test all existing plans based on the threat posed by a pandemic.	
Preparation			X	X	X	X	X	X	Should consider establishing escalation trigger points based on warning levels issued by the WHO, CDC, etc.	
Preparation			X	X	X				Should regularly contact governments, international agencies and industry groups about the availability of new guidance.	
Preparation			X	X	X	X	X	X	Should ensure employees know what to do and whom to inform if they identify a suspected infection among their colleagues.	
Preparation			X	X	X				Should define responsibilities within the organization for pandemic planning and tracking the development of potential threats.	
Preparation			X		X				Should reexamine the supply chain and assess what additional risks exist to the continuation of service from suppliers through operations to customers.	
Preparation			X	X	X				Should share business continuity plans with key suppliers and service providers to increase transparency.	
Preparation			X	X	X				Should consider the increased risk from using international versus regional suppliers, particularly from areas already infected.	
Preparation			X	X	X	X	X	X	Should review or develop employee health procedures to minimize the potential for transmission of infectious diseases to other workers.	
Preparation			X	X	X	X	X	X	Should evaluate current employee healthcare plans to ensure adequate coverage in the event of prolonged absence from work.	
Preparation					X		X		Should consider building capacity for telecommuting.	
Preparation			X	X	X				Should develop a plan to educate staff about possible consequences and preparation steps being taken by the company.	
Preparation			X	X	X	X	X	X	Should issue periodic "news releases" to employees to educate them about the disease and what healthcare precautions they need to take at home and in the workplace.	
Preparation			X	X	X	X	X	X	Should test operations continuity plans regularly and consider testing these plans or running a rehearsal using various outbreak scenarios.	
Preparation			X	X		X		X	Should ensure senior managers have crisis management skills or access to crisis management resources.	
Preparation							X		Should assess facilities to determine whether clean operating environments can be supported (e.g., the operation and filtration of air conditioning systems).	
Preparation	5165	X	X	X					Should ensure that teleworkers have the equipment and support necessary to secure their computing platforms and systems at an equivalent level of those within company office facilities (e.g., Security software, firewalls and secure documents storage)	
Preparation	0491	X	X	X	X				Should, where programs exist, coordinate with local, state and/or federal emergency management and law enforcement agencies for pre-credentialing to help facilitate access by technicians to restricted areas during an event.	
Preparation	5288	X	X	X	X				Should establish and implement a policy which works with local, regional, state and federal agencies to provide access or letters of access to personnel during emergency events.	
Preparation	0609	X	X		X				Should provide and maintain the contact information for mutual aid coordination for inclusion in mutual aid processes.	
Preparation	0804			X					Should consider appropriate means for providing their customers with information about their traffic policies so that users may be informed when planning and utilizing their applications.	
Preparation	1023	X	X	X	X				Should identify essential staff within their organizations that are critical to disaster recovery efforts. Planning should address the availability of these individuals and provide for backup staff.	

		<div> <div>Government</div> <div>Property Managers</div> <div>Public Safety</div> <div>Equipment Providers</div> <div>Service Operators</div> <div>Network Operators</div> </div>						Task	Completed
Phase	BP #								
Preparation	1026	X	X		X			Should consider creating a policy statement that defines a remote system access strategy, which may include a special process for disaster recovery.	
Preparation	5134	X	X	X	X			Should consider establishing a policy to manage the risks associated with key personnel traveling together.	
Preparation	5160	X	X	X	X	X		Should have contingency plans in place for the possible absence of critical personnel in their business continuity plan.	
Preparation	5192	X	X					Should provide a current list of all persons authorized for access to the Property Manager, provide periodic updates to this list, and provide instructions for exceptions (e.g., emergency restoration personnel) if they are tenants of a telecom hotel.	
Preparation	5207	X	X		X	X		Should take appropriate precautions to ensure that fuel, other supplies, and alternate sources of power are available for critical installations in the event of major disruptions in a geographic area (e.g., hurricane, earthquake, pipeline disruption). Consider contingency contracts in advance with clear terms and conditions (e.g., Delivery time commitments, T&Cs).	
Preparation	1033	X						Should develop a strategy for deployment of emergency mobile assets such as Cell on Wheels (COWs), cellular repeaters, Switch on Wheels (SOWs), transportable satellite terminals, microwave equipment, power generators, HVAC units, etc. for emergency use or service augmentation for planned events (e.g., National Special Security Event (NSSE)).	
Preparation	3203	X	X		X			Should consider developing options that allow for call delivery from Emergency Notification Services to subscribers with call blocking/screening services in order to assist in the effectiveness of Emergency Notification Systems (Public Safety Mass Calling) and return calls from PSAPs.	
Preparation	5072	X	X	X	X			Should perform risk assessments on key network facilities and control areas on a regular basis, taking into account natural disasters and unintentional or intentional acts of people impacting the facility or nearby structures.	
Preparation	5083	X	X	X	X			Should maintain the availability of spares for critical network systems.	
Preparation	5138	X			X			Should plan for the possibility that impacted network nodes cannot be accessed by company personnel for an extended period of time and define the corporate/agency response for restoration of service.	
Preparation	0416	X	X		X			Should design and implement procedures for traffic monitoring, trending and forecasting so that capacity management issues may be addressed.	
Preparation	0419	X	X					Should design and capacity-manage EMSs (Element Management Systems) and OSSs (Operational Support Systems) to accommodate changes in network element capacity.	
Preparation	0587	X	X				X	Should be familiar with the Telecommunications Service Priority (TSP) program and support / promote it as applicable if they are providers of critical services to National Security and Emergency Preparedness (NS/EP) users.	
Preparation	0595	X	X			X		Should be aware of the dynamic nature of peak traffic periods and should consider scheduling potentially service-affecting procedures (e.g., maintenance, high risk procedures, growth activities) so as to minimize the impact on end-user services.	
Preparation	0599	X	X			X		Should conduct exercises periodically to test a network's operational readiness for various types of events (e.g., hurricane, flood, nuclear, biological, and chemical), through planned, simulated exercises being as authentic as practical including scripts prepared in advance with team members playing their roles as realistically as possible.	
Preparation	0616	X	X		X			Should design and implement procedures to evaluate failure and emergency conditions affecting network capacity.	
Preparation	1008	X	X	X	X			Should use the Incident Command System for incident coordination and control in the emergency operations center and at the incident site.	
Preparation	1063	X	X					Should set Initial Address Messages (IAMs) to congestion priority in accordance with applicable ANSI standards. This will ensure government emergency calls (e.g., 9-1-1, GETS) receive proper priority during national emergency situations. Implementation in all networks should be in accordance with ANSI T1.111.	
Preparation	0787	X	X		X	X		Should consider the use of fixed alternate fuel generators (e.g., natural gas) connected to public utility supplies to reduce the strain on refueling.	
Preparation	0790	X	X	X	X			Should consider providing personal protective equipment (PPE) for infection control (e.g., masks, disposable gloves, and sanitizers) in locations where multiple employees are located.	
Preparation	0791	X	X	X	X		X	Should consider providing personnel training in the use of personal protective equipment (PPE) specific to a pandemic or other crisis situations and the employee's particular job.	
Preparation	0792	X	X	X	X			Should consider modifying attendance guidelines during a pandemic, or other crisis situations.	

Phase	BP #	<div> <div>Government</div> <div>Property Managers</div> <div>Public Safety</div> <div>Equipment Suppliers</div> <div>Service Providers</div> <div>Network Operators</div> </div>					Task	Completed
Preparation	0793	X	X	X	X		Should, as part of business continuity planning, identify employees that can perform their tasks from alternate locations and consider provisions for enabling them to do so.	
Preparation	0794	X	X	X	X		Should, as part of business continuity planning, provide for elevated /increased utilization of remote access capabilities for telecommuting purposes by employees during a pandemic, or other crisis situations.	
Preparation	0795	X	X	X	X		Should as part of business continuity planning, plan for elevated/increased utilization of virtual collaboration and remote meetings capabilities during pandemics or other crisis situations.	
Preparation	0796	X	X	X	X		Should, as part of business continuity planning, consider developing guidelines for the deferral of specific maintenance or provisioning activities during certain situations (e.g., pandemic, holiday, National Special Security Event).	
Preparation	0797	X	X	X	X		Should consider creating a workforce augmentation plan prior to a pandemic or other crisis situation.	
Preparation	0798	X	X	X	X		Should consider, as part of business continuity/disaster recovery, alternate transportation and delivery methods for equipment, spares, and personal protective equipment to prepare for situations where transportation and delivery may be delayed (e.g., pandemic, other crisis situations).	
Preparation	0588	X	X	X	X		Should provide awareness training that stresses the services impact of network failure, the risks of various levels of threatening conditions and the roles components play in the overall architecture.	
Preparation	0518	X			X		Should design and implement procedures for traffic monitoring, trending and forecasting so that capacity management issues may be understood. This applies to Public Safety only in an NG9-1-1 environment.	
Preparation	5285	X	X	X	X		Should establish and implement a policy that calls for the storing of emergency supplies; this could include but is not limited to food, water, sleeping supplies, power equipment to include batteries and other supplies needed to survive an event.	
Preparation	5286	X	X	X	X		Should establish and implement a policy which establishes a means to verify the status of employees and their families and to provide support as appropriate.	

Phase	BP #	<div> <div>Network Operators</div> <div>Service Providers</div> <div>Equipment Suppliers</div> <div>Public Safety</div> <div>Property Managers</div> <div>Government</div> </div>						Task	Completed
Response		X	X	X				Are executives capable of delivering the right messages?	
Response		X	X	X				Should prepare press releases that can be adapted during event response to fit the specific situation.	
Response		X	X	X				Should ensure mechanisms are in place for managing internal and external communications.	
Response		X	X	X				Should have backup/contingencies in case the current means of communication fail.	
Response		X	X	X				Should ensure that spokespersons receive necessary training for dealing with the media and other stakeholders.	
Response								Human Resource/Benefit Concerns	
Response				X		X		Should have a policy in place if an employee wants to work from home.	
Response		X	X	X	X	X	X	Should have an action plan in place if an infected employee comes to work.	
Response		X	X	X	X	X	X	Should have a policy in place if a nonnative employee wants to be temporarily transferred to another region.	
Response		X	X	X	X	X	X	What about his or her family?	
Response		X	X	X	X	X	X	Should have a policy in place regarding provisions to provide family death support.	
Response								Information and Communication Concerns	
Response		X	X	X	X	X	X	Should designate employee(s) who will monitor public health information regarding the nature of the disease, symptoms, and modes of transmission for dispersal to employees and decision makers.	
Response		X	X	X	X	X	X	Should designate employee(s) to keep up-to-date information regarding symptoms and appropriate healthcare precautions in the case of a pandemic.	
Response		X	X	X	X	X	X	Should provide employees with clear instructions as to what they should do and whom they should contact if they are infected or may have been exposed to the virus.	
Response		X	X	X	X	X	X	Should have a plan for company-wide communications in place if employees are not at work.	
Response		X	X	X	X	X	X	Should ensure managers receive training in when to escalate potential problems to upper management.	
Response		X	X	X	X	X	X	Should have a plan to communicate potential problems to employees and clients.	
Response		X	X	X	X	X	X	Should set up call centers to maintain contact with suppliers, clients and employees.	
Response								Operational Concerns	
Response		X	X	X				Should determine at what level of staffing the company can continue to operate (e.g., can the company operate with 25% or greater absenteeism?) and whether employees can work remotely.	
Response		X	X	X				Should determine what level of increased flexibility and accommodation for liberal leave and compensation is possible in a pandemic scenario.	
Response		X	X	X				Should have a policy in place regarding monitoring or restricting travel to high-risk regions.	
Response		X	X	X				Should determine what infrastructure support is needed to support a transition to an at-home workforce.	
Response		X	X	X				Should have a plan to monitor supply chains and ensure supply resources are not contaminated.	
Response		X	X	X				Should be prepared to ensure clients that products are not contaminated by virtue of company plans to monitor supply chains.	
Response		X	X	X				Should prepare a backup or stockpile in case of a disruption to the company's supply chains.	
Response		X	X	X				Should have procedures in place to decontaminate the facility and its heating, ventilation and air conditioning systems, electronic equipment, and soft materials (blankets, curtains, etc.) in case of exposure in a pandemic.	
Response		X	X	X				Should determine necessary measures to provide assurance to facility staff that they are safe to work on-site.	
Response		X	X	X				Should determine benchmarks for approving or prohibiting staff to travel to certain geographic areas.	
Response		X	X	X				Should have a plan in place to bring traveling employees home, inclusive of employees who are infected.	
Response		X	X	X				Should make employees aware of the escalation procedures to obtain additional resources.	
Response		X	X	X				Should include a trained crisis management team with plans for on-call staffing.	
Response		X	X	X				Should build redundancies into training to ensure employees are cross-trained and able to perform multiple duties if the outbreak causes high absenteeism.	

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Phase	BP #								
Response		X	X	X				Should ensure team members are aware of company expectations, and that an appropriate level of personnel management is present on each team.	
Response	1038	X	X	X	X			Should consider during all hazard and preplanned events, communicating the response status frequently and consistently to all appropriate employees detailing what processes have been put in place to support customers and what priorities have been established in the response.	
Response	5012	X	X	X	X			Should limit access to areas of critical infrastructure to essential personnel.	
Response	5062	X	X	X	X			Should staff critical functions at appropriate levels, considering human factors such as workload and fatigue.	
Response	5141	X	X	X	X			Should consider restricting, supervising, and/or prohibiting tours of critical network facilities, systems and operations	
Response	5226	X	X			X		Should maintain liaison with local law enforcement, fire department, other utilities and other security and emergency agencies to ensure effective coordination for emergency response and restoration	
Response	0476	X			X	X		Should consider conducting physical site audits after a major event (e.g., weather, earthquake, auto wreck) to ensure the physical integrity and orientation of hardware has not been compromised.	
Response	5237	X	X	X	X			Should verify the integrity of system spares and replenish spares, as appropriate, as part of a disaster response and at the conclusion of a disaster response at a facility	
Response	0764	X	X		X			Should implement congestion control mechanisms for transporting VoIP data on IP networks	
Response	0517			X				Should design network elements and associated network management elements with the combined capability to dynamically handle peak load and overload conditions gracefully and queue or shed traffic as necessary (e.g., flow control).	
Response	0658	X	X		X	X		Should ensure generator life support systems (e.g., radiator fan, oil cooler fan, water transfer pumps, fuel pumps, engine start battery chargers) are on the essential Alternating Current (AC) buss of the generator they serve.	
Response	0674	X	X		X	X		Should initiate or continue a modernization program to ensure that outdated power equipment is phased out of plant considering capabilities of smart controllers, local and remote monitoring and control, alarm systems when updating power equipment, and being integrated into engineering and operational strategies.	
Response	1033	X						Should develop a strategy for deployment of emergency mobile assets such as Cell on Wheels (COWs), cellular repeaters, Switch on Wheels (SOWs), transportable satellite terminals, microwave equipment, power generators, HVAC units, etc. for emergency use or service augmentation for planned events (e.g., National Special Security Event (NSSE)).	
Response	5206	X	X		X	X		Should maintain sufficient fuel supplies for emergency/backup power generators running at full load and ensure contracted refueling is in place.	
Response	5139	X	X	X	X			Should consider establishing procedures for managing personnel who perform functions at disaster area sites.	
Response	0574	X	X		X			Should actively monitor and manage the 9-1-1 network components using network management controls, where available, to quickly restore 9-1-1 service and provide priority repair during network failure events. When multiple interconnecting providers and vendors are involved, they will need to cooperate to provide end-to-end analysis of complex call-handling problems.	
Response	0608	X	X		X			Should utilize network surveillance and monitoring to keep overflow traffic conditions from adversely affecting networks (this includes OSPs and E9-1-1/NG9-1-1 SSPs).	
Response	1008	X	X	X	X			Should use the Incident Command System for incident coordination and control in the emergency operations center and at the incident site.	
Response	0785	X	X		X			Should consider secured remote access to critical network management systems for network management personnel working from distributed locations (e.g., back-up facility, home) in the event of a situation where the NOC cannot be staffed (e.g., pandemic).	
Response	0789	X	X	X	X			Should consider modifying travel guidelines/policies for use during a pandemic or other crisis situations.	
Response	3234	X	X		X			Should use Policy-based Routing and/or other tactical routing functionality defined for Next Generation 9-1-1 (NG9-1-1) to handle call congestion and outages through diversion of calls to alternate Public Safety Answering Points (PSAP) that have the capabilities to effectively answer and provide assistance during periods of extreme overload or network failure scenarios.	
Response	8928	X	X	X	X		X	Should proactively monitor all security issues associated with computing workstations and promptly apply security fixes, as necessary.	
Response	3210				X			Should consider obtaining connections to provide video (for viewing local weather and news information and monitoring distribution of information over EAS), and utilize that connection to provide diverse access to the Internet and telecommunications. This applies specifically to Emergency Operations Centers and PSAPs.	

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Phase	BP #								
Recovery		X	X	X				Should have plans in place for where the team and its support resources will stay if they have to travel or relocate to a different facility.	
Recovery		X	X	X				Should initially identify and monitor changes of the recovery time.	
Recovery		X	X	X	X	X	X	Should identify objectives for each of the critical business processes that may be interrupted.	
Recovery		X	X	X				Should develop continuity strategies for each process.	
Recovery		X	X	X				Should ensure that continuity strategies been integrated in an effective manner and prioritized, particularly if multiple facilities and regions are affected.	
Recovery		X	X	X				Should identify supply chain dependencies and secure alternative channels in case of disruption, as well as making plans in the event that alternative channels fail.	
Recovery		X				X		Should determine whether there are alternative premises and facilities within and outside of an affected region that can be used.	
Recovery		X	X	X				Should determine whether existing transport links likely to be sufficient to get people and resources to alternate sites.	
Recovery	5062	X	X	X	X			Should staff critical functions at appropriate levels, considering human factors such as workload and fatigue.	
Recovery	5206	X	X		X	X		Should maintain sufficient fuel supplies for emergency/backup power generators running at full load and ensure contracted refueling is in place.	
Recovery	0574	X	X		X			Should actively monitor and manage the 9-1-1 network components using network management controls, where available, to quickly restore 9-1-1 service and provide priority repair during network failure events. When multiple interconnecting providers and vendors are involved, they will need to cooperate to provide end-to-end analysis of complex call-handling problems.	
Recovery	1008	X	X	X				Should use the Incident Command System for incident coordination and control in the emergency operations center and at the incident site.	
Recovery	0785	X	X		X			Should consider secured remote access to critical network management systems for network management personnel working from distributed locations (e.g., back-up facility, home) in the event of a situation where the NOC cannot be staffed (e.g., pandemic).	
Recovery	0786	X	X		X			Should consider allowing Equipment Suppliers or third party Service Providers remote secured access to vital hardware components.	