

VOLUME 1, SECTION 2.5: NATIONAL POLICY-BASED REQUIREMENTS



2.5 NATIONAL POLICY-BASED REQUIREMENTS [C.5, C.6, M.2.1.1(F)]

The Level 3 Team deals with network protection and continued service concerns as part of our daily operations. We address these issues for all our customers in our business continuity and disaster recovery planning activities. This section of the proposal addresses network protection and continuation of services for (3)EnterpriseSM customers.

2.5.1 Basic Functional Requirements [C.5.2.1]

[REDACTED]

[REDACTED] As part of our nationwide telecommunications network, the continuation of services is a critical attribute—especially during times of National Emergency.

The definition of National Emergency includes anything that could cause serious harm to a sizeable segment of the United States population, creates widespread property damage, or shuts down or compromises the ability of the U.S. Government to function. During such disasters, the only remaining link could potentially be that of the national telecommunications infrastructure. Therefore, the importance of NS/EP is of an obvious and critical nature.

[REDACTED]

[REDACTED] In this section we discuss how the basic 14 functional requirements in RFP Section C.5.2.1 are met by Level 3.

[REDACTED]

[REDACTED]

[REDACTED] The applicable functional requirements of each service are listed below with comments following each requirement. Since these services are provided using a single network system, the requirements are usually met in the same way for all services provided.

2.5.1.1 ENHANCED PRIORITY TREATMENT

Voice and data services supporting NS/EP missions should be accorded preferential treatment over other traffic.

[REDACTED]

[REDACTED]

[REDACTED] The provisioning guardrails put in place by Level 3 are monitored by [REDACTED] groups ensuring that each interval is met. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



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2.5.1.2 SECURE NETWORKS

Networks must have protection against corruption of, or unauthorized access to, traffic and control, including expanded encryption techniques and user authentication, as appropriate.

The Level 3 IPS offering is inherently protected against unauthorized access. [Redacted text]

[Redacted text block]

[Redacted text block]

[REDACTED]

2.5.1.3 NON-TRACEABILITY

Selected users must be able to use NS/EP services without risk of their usage being traced (i.e., without risk of user or location being identified).

The Level 3 IPS fully supports all [REDACTED] addressing schemes, where the end user's IP is never advertised to the outside world. With such [REDACTED] schemes in place (which are currently employed by the vast majority of Federal agencies), tracing the origination or termination address is virtually impossible. In addition, [REDACTED]

2.5.1.4 RESTORABILITY

Should a service disruption occur, voice and data services must be capable of being reprovisioned, repaired, or restored to required service levels on a priority basis.

The Level 3 geographic network diversity is the core design characteristic driving Level 3's high level of network reliability. [REDACTED]

[REDACTED]

2.5.1.5 INTERNATIONAL CONNECTIVITY

Voice and data services must provide access to and egress from international carriers.

Level 3 has established an extensive capability in the arena of international interconnectivity. In general, our business and service model has resulted in our emergence as a robust “carrier’s carrier”. We provide services to and have interconnectivity with most major international carriers. Our European facilities based network is fully interconnected with major carriers and has effectively provided business continuity for many carriers and customers in outage situations as in the shut down of the KPN-Quest network in 2004. The Level 3 customer base representing international connectivity includes:

[REDACTED]

2.5.1.6 INTEROPERABILITY

Voice and data services must interconnect and interoperate with other Government or private facilities, systems, and networks, which will be identified after contract award.

[REDACTED]

[REDACTED]

2.5.1.7 NATIONWIDE COVERAGE

Voice and data services must be readily available to support the national security leadership and inter- and intra- agency emergency operations, wherever they are located. Figure 2.5-1 shows the major nodes and links of the Level 3 backbone.

The Level 3 reach regarding each of the applicable products from RFP Section C.5.2.2.1 extends across the major metropolitan areas of the US, resulting in nationwide coverage. The Level 3 Network serves 113 on-net markets in the US. In addition, the network delivers wholesale dial-up access coverage to more than [REDACTED] of the US population. The network offers voice services in more than [REDACTED] centers nationwide.

[REDACTED]

[REDACTED]

2.5.1.8 SURVIVABILITY AND ENDURABILITY

Voice and data services must be robust to support surviving users under a broad range of circumstances, from the widespread damage of a natural or man-made disaster up to and including nuclear war.

Survivability is a built-in concept with Level 3's [REDACTED] program. It is included with [REDACTED]. The ongoing [REDACTED] [REDACTED] [REDACTED] calls for preventive measures that reduce the likelihood of disaster—and minimize the impact if one does occur. The Level 3 services have been designed to address risk management, focusing on [REDACTED] and [REDACTED] solutions to reduce any exposure. Currently, the Level 3 Network design includes a [REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

[REDACTED] These elements all combine to reduce the risk of outage to the Government. Additionally, [REDACTED] data centers are operated, each at least [REDACTED] miles from the next. [REDACTED]

[REDACTED]
[REDACTED]

2.5.1.9 BROADBAND SERVICE

The service must provide broadband service in support of NS/EP missions; for example, video, imaging, web access, and multimedia.

High-speed broadband services are the cornerstone products of the Level 3 suite. These include high-speed links [REDACTED], and advanced protocols such as [REDACTED], [REDACTED]
[REDACTED]

Through our [REDACTED] product, users can run sessions that are completely secured at the low “bit level” while transferring high-level information such as whiteboard and videoconferences.

Web access is instantly available to all ISP customers who have requested Internet connectivity.

2.5.1.10 SCALEABLE BANDWIDTH

NS/EP users must be able to manage the capacity of the communications services to support variable bandwidth requirements.

All NS/EP users can augment their available bandwidth quickly and efficiently. [REDACTED] we react quickly to change orders from customers and can prioritize specific groups of customers, such as those who belong to a group earmarked as critical users. Level 3 has a world-class service activation and field services organization. [REDACTED] Level 3 is currently meeting [REDACTED] of its Customer Commit Dates across all services.

[REDACTED]

2.5.1.11 AFFORDABILITY

The service must leverage network capabilities to minimize cost (e.g., use of existing infrastructure and commercial off-the-shelf (COTS) technologies and services).

Level 3 maintains competitive prices starting at the physical layer of the network. Our [REDACTED] fiber system enables deployment and maintenance of the latest generations of fiber plant. [REDACTED], our [REDACTED] systems are continually upgraded to provide the most cost-competitive transport in the industry. The Level 3 [REDACTED] network is a [REDACTED] backbone, enabling us to run all of our IP products over the same backbone. The [REDACTED] backbone gives Level 3 economies of scale and simplifies operations for our support staff.

2.5.1.12 RELIABILITY AND AVAILABILITY

Services must perform consistently and precisely according to their design requirements and specifications, and must be usable with high confidence.

Regardless of whether the customer is using [REDACTED] the service is engineered for precise, efficient performance. Level 3 prides itself on customer satisfaction and continually upgrades and updates all services.

Level 3 provides reliability and high availability through network engineering that designs these qualities into the network from the start [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

2.5.2 National Security and Emergency Preparedness Functional Requirements Implementation Plan [C.5.2.2, F.2(92)]

Level 3 plans for uninterrupted service to our customers in the event of a variety of hazards. This [REDACTED] approach to network design and operation covers [REDACTED] disasters including intentional attacks and “acts of God.” Our [REDACTED] service planning puts Level 3 in a solid position to support [REDACTED] customers with continued service even in times of national emergency.

This section contains Level 3’s National Security and Emergency Preparedness (NS/EP) Functional Requirements Implementation Plan (FRIP) required by RFP Section C.5.2.2. Accordingly, our Plan is organized into [REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]. The contents of this plan augment the information contained elsewhere in this proposal.

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Our network architecture and design positions Level 3 to provide Network customers with [REDACTED] communications in NS/EP scenarios. Agencies have the option of specifying various levels of priority for restorations of service and packet delivery. Our system supports all [REDACTED] [REDACTED] schemes as well as [REDACTED] options for identity protection. Our services are available nationwide and receive and transmit traffic to international locations.

Implementation of some of the functional requirements is best handled with [REDACTED] design features or actions. This FRIP covers the specific actions Level 3 has taken, or features or functions Level 3 has in place, to provide the following functional requirements:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

This section of the FRIP describes the [REDACTED] [REDACTED] and [REDACTED] [REDACTED] features that protect the Level 3 Network ensuring our ability to provide services to Network customers.



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2.5.3 Protection of SS7 Signaling Systems [C.5.2.5]

[REDACTED]

Level 3 does [REDACTED] to protect SS7 signaling—primarily because [REDACTED] forces the equipment to add delay [REDACTED] [REDACTED] Level 3 designed the SS7 network for extremely fast response. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



[Redacted text block]

The SS7 network has been designed to comply with Level 3's security requirements for physical and remote access.

[Redacted text block]

2.5.3.1 MESSAGE THROTTLING

[Redacted text block]



[Redacted text block]

2.5.3.2 RETRANSMISSION PROTECTION

If a link has a large number of retransmissions, the traffic of the link could increase enough to cause congestion on that link. To correct this condition,

[Redacted text block]

[Redacted text block]

2.5.3.3 CONTROLLED REROUTING – PROTECTION AGAINST EXCESSIVE REROUTES

This procedure eliminates the possibility of congestion [Redacted]

[Redacted text block]



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2.5.3.4 GATEWAY SCREENING

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

2.5.4 Assured Service in the National Capital Region [C.5.2.7]

Although Level 3 is committed to reliable, continuous service at all locations, we are aware of the centric nature of Government operations in the National Capital Region—the Washington, DC area. This is a highly reliable region in [REDACTED]

[REDACTED]

[REDACTED]

This level of reliability is network-wide, which is important for service assurance in the Washington DC area, because customers there connect to locations throughout the nation and the world. [REDACTED]

[REDACTED]

[REDACTED] Level 3 designed its [REDACTED] backbone using the [REDACTED]

Today, we have multiple [REDACTED] routes connecting high-traffic areas. This allows us to provide an Internet access product with very low latency, high reliability, and low cost.

Level 3 will offer [REDACTED] network [REDACTED] and [REDACTED] to serve Federal agencies in the National Capital Region. For [REDACTED] services, each customer will have the option of [REDACTED]. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

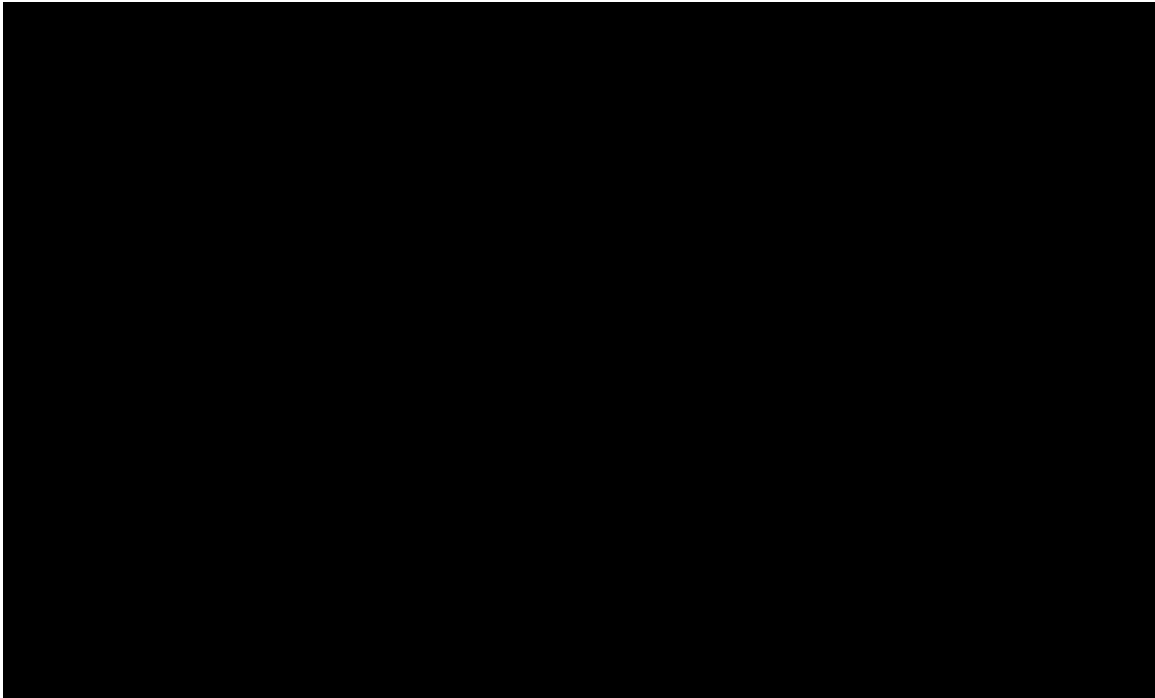
[REDACTED]

Fortunately, most Federal Buildings are located in the downtown area of Washington, DC. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

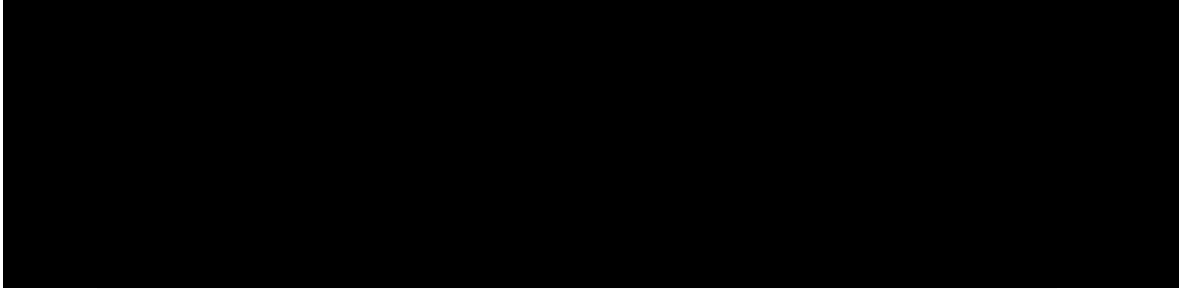


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[Redacted]

[REDACTED]

The Level 3 IP platform can be accessed in more than [REDACTED] markets [REDACTED] via more than [REDACTED] on the continuously upgradeable Level 3 Network. Our IPS can be offered at any of these [REDACTED] points of demarcation.

Level 3 is continually adding new [REDACTED] buildings and new points of demarcation [REDACTED] onto its network. Unlike some competitors, Level 3's built network has robust metro fiber networks in [REDACTED] metropolitan areas nationwide, enabling Level 3 to easily add buildings and points of demarcation onto the network.

[REDACTED]

This can be done in the initial design phase, and then later by enforcing build-out requirements. [REDACTED]

[REDACTED]

[REDACTED]

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If a national emergency occurs, it is crucial that services continue unabated. This is where Level 3's [REDACTED] [REDACTED] plans come into play.

[REDACTED]

Redundancy and resiliency are critical to the proper operation of any network. Networks should be designed with no single point of failure and should be robust enough to function without impairment when network problems occur. If a problem arises, a provider should have the processes in place to restore the network quickly.

[REDACTED]



[Redacted text block]

[REDACTED]

[REDACTED]

[REDACTED] Additional route miles will become available as [REDACTED] efforts proceed. [REDACTED]. The North American network alone has an underlying [REDACTED] infrastructure. Figure 2.5-8 illustrates the [REDACTED] infrastructure in the Eastern United States. This completed network is optimized end-to-end for [REDACTED] and is operated entirely by Level 3.

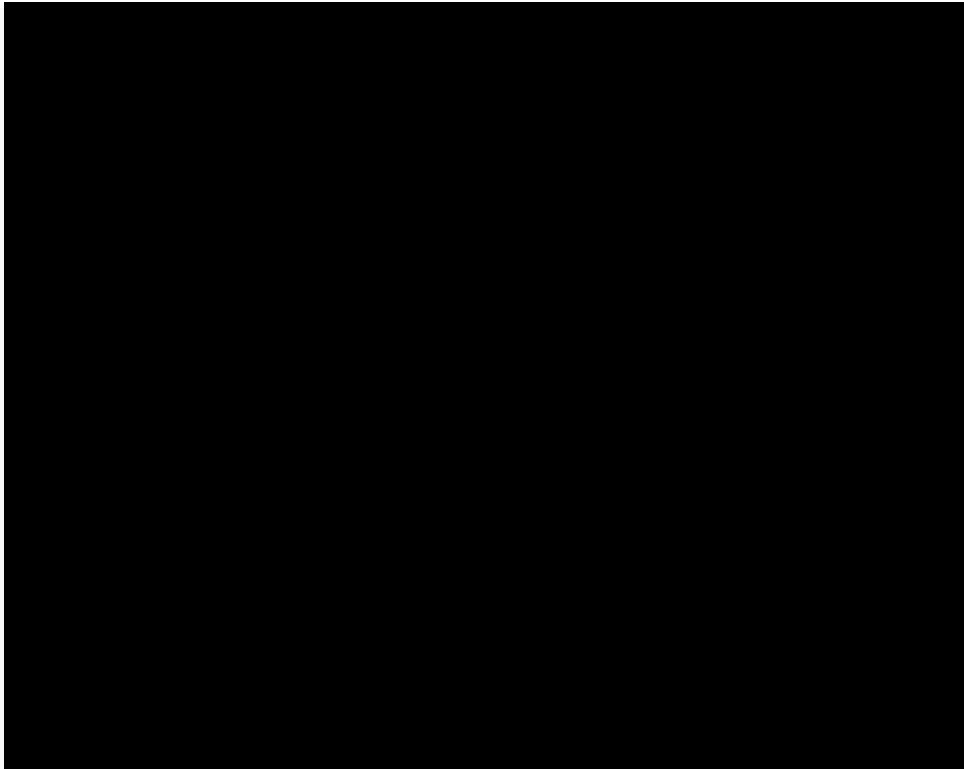
[REDACTED] [REDACTED] miles of [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



[REDACTED]

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[REDACTED]

2.5.5 Meeting Section 508 Provisions [C.6]

Level 3 is committed to ensuring that Electronic Information Technology (EIT) services provided under Networx comply with Section 508 of the Rehabilitation Act of 1973, where applicable for government employees.

Level 3 has reviewed the Section 508 compliance requirements included in Section C.6 of the Networx Enterprise RFP and looks forward to working with the Federal Government to ensure that all EIT procured under the resultant contract meets the applicable provisions of [REDACTED]

[REDACTED]

[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

An overview of the information provided on the forms can be found below, and the [REDACTED] follow in Section 2.5.5.1.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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