Please find below:

- Survey Results for the past five years and
- Sample NPAC Performance Feedback Survey from 2012

For more detail on our Customer Satisfaction and Customer Service, Please See Proposal Section 2.5 which is attached to the IASTA tool in response to RFP Section 15.1 Option Attachments.

NPAC Survey Results for the Past Five Years

Year	Actual Score	Best Score	Industry Standard
[illegible]	[illegible]	[illegible]	[illegible]
2009	3.66	4.0	Superior
[illegible]	[illegible]	[illegible]	[illegible]
2011	3.80	4.0	Superior
[illegible]	[illegible]	[illegible]	[illegible]

Score Key:

Equal or greater than 2.00 but less than 3.00 = Average
Equal or greater than 3.00 but less than 3.25 = Above Average
Equal or greater than 3.25 but less than 3.5 = Exceptional
Equal or greater than 3.5 but less than 4.0 = Superior

Welcome to the Number Portability Administration Center (NPAC) Users Survey. Neustar would like to obtain your feedback and comments concerning your interaction with the NPAC. Your response will be forwarded to Neustar's Business Operations group for evaluation and will assist us in better meeting your future needs.

Note: This survey deals only with Neustar's provision of NPAC services and not with any other services or products offered by Neustar. This survey resides on a secure third-party server hosted by TMNG, the firm hired to administer this process. Your individual responses will be held confidential and will not be shared with anyone outside of Neustar and TMNG. Please note: including comments with your ratings will be most beneficial in addressing any potential future service changes/enhancements.

The survey will keep track of your company's answers for each section, and these answers may be accessed and changed at any time up until the survey deadline of October 26, 2012.

Thank you for participating.

Your responses are appreciated.

4	3	2	1
Extremely Satisfied	**Somewhat Satisfied**	**Somewhat Dissatisfied**	**Extremely Dissatisfied**

1. Customer Service

1a. Responsiveness

	4	3	2	1
Help Desk—Tier 1 support				
Analysts—Tier 2 support				
Customer Connectivity Services				
Billing Personnel				
Account Management				
Senior Management				
Neustar overall				

Comments:

1b. Accessibility

	4	3	2	1
Help Desk—Tier 1 support				
Analysts—Tier 2 support				
Customer Connectivity Services				
Billing Personnel				
Account Management				
Senior Management				
Neustar overall				

Comments:

1c. Knowledge

	4	3	2	1
Help Desk—Tier 1 support				
Analysts—Tier 2 support				
Customer Connectivity Services				
Billing Personnel				
Account Management				
Senior Management				
Neustar overall				

Comments:

1d. Issues handled with a sense of urgency

	4	3	2	1
Help Desk—Tier 1 support				
Analysts—Tier 2 support				
Customer Connectivity Services				
Billing Personnel				
Account Management				
Senior Management				
Neustar overall				

Comments:

1e. Neustar personnel act as customer advocates

	4	3	2	1
Help Desk—Tier 1 support				
Analysts—Tier 2 support				
Customer Connectivity Services				
Billing Personnel				
Account Management				
Senior Management				
Neustar overall				

Comments:

2. Billing

	4	3	2	1
Accuracy				
Timely delivery				
Sufficient detail				
Ease of reading invoice				
Type of payment options				

Comments:

3. Industry forums (e.g. LNPAWG, Cross Regional, Testing)

	4	3	2	1
Knowledge level displayed				
Neutrality				
Responsiveness				
Documentation				
Use of resources				

Comments:

4. New Service Rollout

4a. On-time delivery of:

	4	3	2	1
SOW				
Product				
Level of Detail Description				
Schedule				
Pricing				

Comments:

4b. Testing

	4	3	2	1
Test Engineer Knowledge				
Test Engineer Responsiveness				
Test Engineer Communication Skills				
Applications Support Responsiveness to Issues				
Test Environment Availability for Scheduled Turn-up, Group and Failover Testing				
Test Engineer successfully managed testing time:				
o Turn-up testing				
o Group and Failover testing				

Comments:

5. Operations

5a. Outages

	4	3	2	1
Responsiveness of Help Desk, Service Delivery, Operations and Management				
Knowledge level of Help Desk, Service Delivery, Operations and Management				
Sense of urgency displayed by Help Desk, Service Delivery, Operations and Management				
Root Cause Analysis Reporting				
Accuracy of Resolution				

Comments:

5b. System Performance

	4	3	2	1
System Availability				
System Reliability				
System Responsiveness				
System Accessibility				
System Throughput				

Comments:

5c. Industry Communications

	4	3	2	1
Frequency				
Usefulness				
Timeliness				
Website content				
Website ease of use				

Comments:

6. NPAC Pool Block Provisioning and Mass Porting

	4	3	2	1
Accessibility of NPAC Pooling and Mass Porting personnel				
Responsiveness of NPAC Pooling and Mass Porting personnel				
Knowledge level of NPAC Pooling and Mass Porting personnel				
Order fulfillment - Timeliness				
Order fulfillment - Accuracy				
Ticket Support				
Issues handled with a sense of urgency				

Comments:

7. Neustar's Image as a vendor:

For the section that follows, please use the following definition as you provide your response:

- **Reliable**—Our clearinghouse services depend on complex technology that is designed to deliver reliability up to 99.9%. We commit to our customers to deliver high quality services across numerous measured and audited service levels, including system availability and response times.
- **Responsive**—We learn from the operational experiences of our customers and we routinely apply that knowledge to further enhance the clearinghouse. Our customers benefit from the compounded effect of shared industry insights.
- **Trusted**—The data we collect are important and proprietary. Accordingly, we have developed procedures and systems to protect the privacy and security of customer data, restrict access to the systems and safeguard the integrity of our clearinghouse.
- **Neutral**—In managing our clearinghouse services, we adhere to FCC-defined neutrality regulations and policies. Independent third parties audit our adherence to these requirements on a quarterly basis. In fact, the FCC has designated Neustar as a neutral company.

	4	3	2	1
Neustar As Neutral Third-Party Service Provider				
Level of Trust your company has in Neustar				
Value Neustar brings to your company				
Neustar's Demonstrated Industry Thought Leadership				
Neustar's emphasis on technological innovation				
Neustar as a reliable partner				

Comments:

8. Overall customer focus

	4	3	2	1
Overall customer focus				

Comments:

1.2 NPAC/SMS Overview

Why Neustar

- Over 15 years of experience architecting, developing, maintaining, and improving the NPAC/SMS to provide the highest quality of service to the Industry
- Five-Layer custom-built NPAC/SMS architecture with focused expertise at each Layer, as well as a cross-functional approach to deliver the highest levels of availability, scalability, reliability, and performance

Security-Related Information

- Highly redundant architecture for all Layers designed to increase availability of the NPAC/SMS

Security-Related Information

- Separate Database for reporting to ensure the live NPAC/SMS is not impacted by offline queries and reports
- Preserve and maintain the integrity of over 1000 business rules in a constantly changing environment

New for the Next Term

- All required enhancements listed in RFP Section 7.1
- Sufficient flexibility to include all future considerations listed in RFP Section 7.2
- Further automation to guarantee 99.99% high-availability NPAC/SMS architecture
- New NPAC Portal to deliver a seamless and fully functional user experience across all NPAC services
- Additional connectivity options including Ethernet for greater choice

> TMNG finds the overall NPAC operating environment to be consistently stable, robust, scalable/expandable, and well managed...
>
> TMNG—2012 Article 14 audit

The NPAC/SMS platform operates on a custom-built 5-Layer service architecture, uniquely tailored to meet and exceed the U.S. Industry's functional specifications, interface requirements, and service level requirements. As a critical element of every Service Provider's network and subscriber operations, the NPAC/SMS must perform to the highest levels of availability, must be able to support high and varying levels of demand, must be scalable over time, and must be flexible and modular enough to accommodate new requirements without disruption.

Proposal Section 1.2, NPAC/SMS Overview, describes the elements of the NPAC/SMS's technical design, and the manner in which Neustar's uniquely designed operation provides the Industry with the highest levels of functionality, reliability, and performance. Exhibit 1.2-1 demonstrates our performance in 2012. Neustar's commitment to pristine operations and design pre-dates the current RFP; exceeding SLRs and customer expectations has been ingrained in our culture over the last 15 years, and has resulted in several aspects of the NPAC/SMS that go well above and beyond Industry requirements. For example, Neustar has developed customized NPAC/SMS monitoring tools to evaluate the health and performance of the 5-Layer architecture, and pro-actively identify any issues before they become visible to service providers. Security-Related Information

This function is not required under the FRS and was developed proactively by Neustar. Security-Related Information

These are just a few of the Neustar custom-built tools and procedures that are essential to the NPAC's operation, and which a new vendor would have to pick up on the job.

Neustar has successfully met or exceeded the requirements for 11,333 out of 11,340 NPAC/SMS service level measurements over the last five years. In addition, our data center, network, and storage systems are consistently rated as exceeding Industry best practices by independent third parties. Neustar's proposal for the next term includes building upon this performance—plus continued investment into the NPAC/SMS architecture, regular technology refreshes, and process refinements to continue raising the bar.

Proven Design and Development Principles

One way to deliver an NPAC/SMS would be to outsource the deployment or operation of the platform to a third party, with the prime LNPA focused primarily on system design, implementation, and interaction with Service Providers. A vendor taking this approach would be conceding that its strengths do not lie in high performing data center operations, signifying a need to separate the key functions of the LNPA amongst multiple suppliers. Given the unique nature of the LNPA service, however—specifically the wide variety of constituents for whom responsiveness and technical knowledge is essential—the coordination and collaboration between the product team that works with the Industry to design and develop the solutions, the engineering staff that implements the solutions, and the operations staff that maintains it, is a vital ingredient for success. Any miscommunication in this chain can result in delivery of a solution that does not meet the needs of the Industry and could delay fulfillment of any number of requirements. Any changes in the delivered solution as a result of hand-offs between the LNPA and its vendors will generate further chaos and finger-pointing, potentially resulting in further delays and impacts to Service Providers.

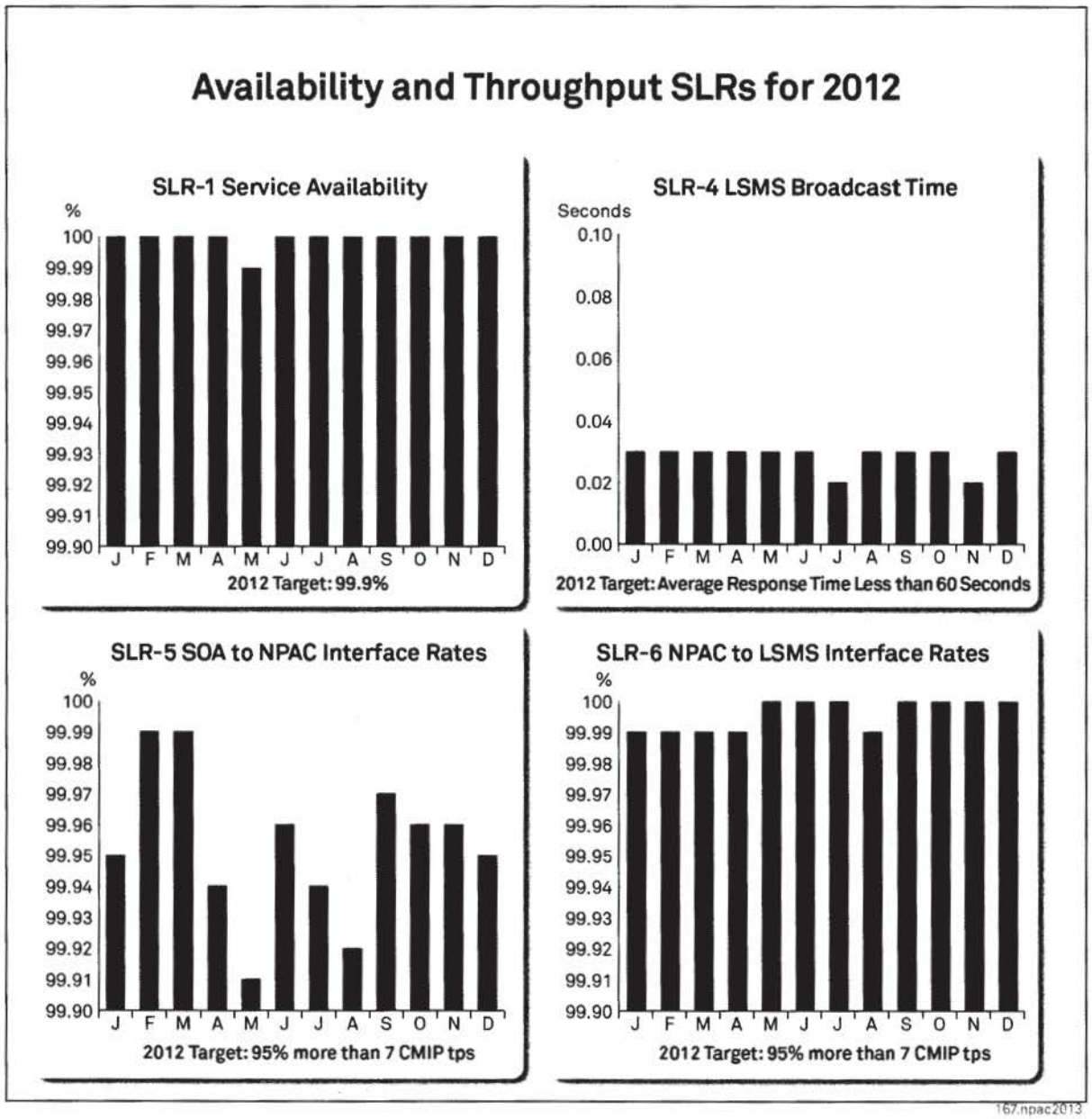

Exhibit 1.2-1: Neustar's unique operations provide the Industry with the highest level of service.

When operations are outsourced, there are always disconnects between the entity that engineered the solution and the entity operating it, increasing the likelihood for bugs and service degradations.

The concentration of design, engineering, and operations within a single entity is the best way to ensure high levels of performance—Neustar's experience proves this. Neustar utilizes a prevailing DevOps software development methodology (also called "agile operations") that stresses communication, collaboration and integration between Development, QA and Operations. It has been shown to be more responsive to requested changes and

enhancements and better able to deliver superior services, reliability, and availability. DevOps targets software delivery, quality testing, feature development and maintenance releases in order to improve reliability and security as well as create faster, more reliable development and deployment cycles. As business and development teams need more agility, a fundamental reorientation is needed to provide systems infrastructure in an effective manner. DevOps has been successfully implemented within the NPAC technology teams and has proven to be a valuable model with significant benefits to customers.

If another Respondent plans to rely on Neustar's application software to build an NPAC/SMS solution, it will not be able to simply recompile the code in a new data center and meet the Industry's needs—the RFP has increased performance requirements in several arenas, many of which will require updates to the existing NPAC/SMS software. Not only would the Respondent have to modify application software that was developed by Neustar and is unfamiliar to their engineers, it also would have to integrate that application software into a fully-functional service operation—including data centers, routers, switches, firewalls, security systems, databases, storage systems, and countless other elements of the total solution. Finally that Respondent would need to re-create the operational processes and procedures that enable Neustar to operate at such a high level of service quality today.

Security-Related Information

New for the Next Term

During our tenure as the LNPA we have, in partnership with the Industry, evaluated 452 NANC and over 100 Illinois change orders, and deployed 380 change orders over 11 major software releases and countless point releases. Neustar has proven its ability to seamlessly enhance the NPAC/SMS platform with new service provider requirements without disruption or loss of backward compatibility. For the next term, Neustar offers the following enhancements and future considerations, which are further described in Proposal Section 1.2, System Functionality:

All enhancements required by the NPAC/SMS RFP are included in Neustar's proposal:

1. **Alternative interface**—Neustar is currently in the process of developing an Security-Related Information, in accordance with NANC Change Order 372, which will provide Service Providers a flexible and secure alternative to the existing CMIP interface.

2. **Support of IPv6**—Neustar is currently in the process of developing a plan to implement IPv6, in accordance with NANC Change Order 447, which will allow Service Providers to migrate to newer IP version.

3. **Elimination of NPAC/SMS support of non-EDR**—Per SOW 86, Neustar complies with the requirement to eliminate non-EDR support for SOA and LSMSs.

In addition, Neustar confirms that the NPAC/SMS and LNPA service are flexible enough to accommodate requirements related to **all Future Considerations** listed in the NPAC RFP Section 7.2.

1. **Automation of Processes Between the NPAC/SMS and the Pooling Administration System (PAS)**—Neustar has proposed several automations for the interaction between the Pooling Administration System and the NPAC/SMS to increase throughput and reduce the potential for costly errors.

2. **Combining Steps for Intra-Service Provider Ports**—Neustar has proposed new functionality to the intra-SP porting process, including a one-step SOA Create/Activate capability which improves the processing Service Providers' large porting projects.

3. **Inter-Carrier Communications**—the NPAC/SMS architecture can incorporate the existing ICP and LSR processes (including Intermodal) into the NPAC, reducing Service Provider costs and simplifying operations. Because this would require significant changes to Service Provider systems and business rules, Neustar also recommends that the Industry explore other options for streamlining the Inter-Carrier Process, focused on future porting requirements rather than mere duplication of existing functionality.

4. **PSTN to IP Transition**—the NPAC/SMS is a critical component of U.S. infrastructure that will enable Service Providers to efficiently manage interconnection in the transition from the PSTN to IP; because a full description of the NPAC role requires a broader discussion of the environment, Proposal Section 1.5, Future NPAC/SMS Innovations, describes our view in greater detail.

5. **Future Mandated Changes**—the NPAC/SMS is flexible enough to support any required enhancements that comes as a result of regulatory mandates.

In addition to the above commitments, Neustar is also proposing to deliver a new **NPAC Portal** that unifies all aspects of the NPAC user experience into a secure, easy to navigate user interface that uses a cross-regional login. It will support all porting functions; permit real-time, chat-based interactions with NPAC Help Desk experts; provide reporting capabilities; incorporate the existing npac.com website; facilitate Industry collaboration; and much more, all in an effort to enhance operational efficiencies, ease of use, security, and facilitate access to business-critical information. The new Portal, along with Neustar's approach for the RFP's requested enhancements, is described in Proposal Section 1.2.2, NPAC/SMS Functionality.

Additional Automations to Exceed Increased Availability and Throughput Requirements

Neustar's performance against Service Level Requirements has been achieved thanks to the NPAC/SMS's redundant, scalable, 5-Layer architecture (described in detail in Proposal Section 1.2.1, NPAC/SMS Architecture), combined with hardened system monitoring and failover procedures, regular end-of-life replacement for all relevant hardware, and expert staff capable of anticipating and resolving issues before they become visible to Service Providers or consumers. The NPAC/SMS is operated with a failover capability that transfers service to our alternate site without disruption in live transaction traffic—a feat other vendors in the U.S. have struggled to achieve.

The next ten years will generate a material increase in NPAC/SMS transaction activity, and a variety of mission critical use cases. In recognition of the Industry needs, Neustar notes the RFP's requirements to increase SLR 1 availability thresholds from 99.9% to 99.99%, SLRs 5 and 6 thresholds from 95% of all transactions processed at seven per second to 99.9%, and SLR 7 thresholds for SOA/LSMS interface availability from 99% to 99.9%. We also note the new SLR 3, for Partial Service Availability (availability for even a single user). Although Neustar has

consistently performed well above these requirements over the last five years, and expects to continue doing so over the next term, we have determined that additional automation, instrumentation, and "always-on" enhancements will be required to guarantee the requisite service availability and throughput.

Security-Related Information

Our extensive experience with replication technology, failover execution, and the NPAC/SMS architecture will give us the insight to craft a stable but automated Failover capability. Prior to the start of the new contract term, Neustar will engage further discussions within the Industry forums to evaluate impacts and propose the least impactful and most beneficial approach to automation.

As for SLRs 5 and 6, Neustar consistently exceeds the current SOA-to-NPAC and NPAC-to-LSMS interface transaction rate SLRs of 95% of all transactions at seven transactions per second, with an average measurement of 99.9% of transactions meeting the requirement during calendar year 2012, across all U.S. regions. To guarantee continued performance at these levels, Neustar will pursue additional application-level enhancements that further optimize the allocation of interface processes to Service Provider connections, as well as perform continuous analysis of usage and performance patterns (including simulations in the Neustar Lab) to identify any opportunities for continued improvement. These potential investments are internal to the NPAC/SMS and will not result in any impacts to Service Providers.

Neustar's performance throughout 2012 for SLR 7 (SOA/LSMS Interface Availability) was 100%. In recognition of the Industry's raised requirements for the new term, and in response to Service Provider requests, Neustar is in the process of adding an Ethernet connectivity option, with a total of four redundant network providers connected to four different entrance facilities across Neustar's geographically diverse data centers.

Future Architectural Considerations

The enhancements described above will not impact compliance with the NAPM LLC's requirements in the current RFP, including that of synchronous replication across Neustar's geographically diverse data centers. In our continued effort to improve service, Neustar regularly evaluates new methods and best practices, and considers various alternatives with external experts. When appropriate, we share those methods and practices with the LNPA Working Group and the NAPM LLC, to jointly evaluate new ways to support U.S. Service Providers with NPAC/SMS enhancements. In light of the raised system availability SLR, Neustar has considered various means to implement the Industry's requirements for redundancy and failover, including changes to the data synchronization mechanisms across the primary and back-up data centers.

Security-Related Information

Thinking further into the future, there are additional design considerations at the Application Layer that could eliminate the need for synchronous database replication altogether. Neustar has implemented Active/Active designs in several of its commercial services, which place the burden on the Application Layer to manage failure detection and failover automation to execute high availability, data integrity, and consistency across multiple database instances and sites, rather than rely on replication technology to perform the synchronization. Moving in this direction for the NPAC/SMS would allow NPAC users to connect to either or multiple active sites at any time, improving availability and redundancy for the entire ecosystem.

As already stated, we are compliant with the Industry's requirement of ensuring synchronous replication between data centers without making the suggested changes noted above. However, in an effort to constantly improve, we believe these changes will benefit the operations of the NPAC/SMS for the entire Industry, and we look forward to engaging the Industry in discussions on this topic.

Cloud Computing

Security-Related Information

Neustar is in the process of deploying its next generation architecture known, as NexGen, to be used for all new services. NexGen allows us to streamline design, development, QA and deployment of services in public and private cloud environments, as appropriate. It uses a common baseline architecture that accommodates service-level selection of the operating system, virtualization, an API-layer and additional tools. We plan to migrate several existing Neustar services to the NexGen platform over the next few years starting in the coming months.

At the present time, the majority of cloud-based services are consumer-facing or internal business process services. Cloud technology is difficult to deploy (on available architectures) for services with required four or five nines availability, or latency of less than a few hundred milliseconds for the lion's share of traffic. Neustar believes that geographically diverse, redundant, but *dedicated* resources for database and application services are more appropriate for the NPAC/SMS than an immediate migration to Cloud technology, given the relatively constant flow of system usage and transaction demand.

Neustar has developed the procedures to determine what benefits and obstacles cloud computing offers to our customers, and over the long term we expect the majority of our services to be cloud based. We recommend that the Industry continue to evaluate the latency and reliability concerns attendant to Cloud technology over the next few years, and as they are overcome, consider the service provider implications of taking advantage of that technology. As the demand for transaction services increases with the deployment of IP networks and machine-to-machine, Neustar will continue to support the investments necessary to meet service provider requirements.

NPAC/SMS Technical Design

Neustar developed and operates the NPAC/SMS using scalability, extensibility, and security as guiding principles to ensure the system meets or exceeds requirements today and into the next 10 years with the highest levels of reliability, performance, throughput, capacity, functionality, availability. The following subsections, highlighted below, describe the NPAC/SMS in detail.

- **Proposal Section 1.2.1 NPAC/SMS Architecture** outlines the five Layers that comprise the NPAC/SMS:
  - Security-Related Information

- **Proposal Section 1.2.2 NPAC/SMS Functionality** provides a comprehensive list of the NPAC/SMS' current and potential future capabilities and functionalities that we develop and maintain in partnership with the Industry.
- **Proposal Section 1.2.3 System monitoring** highlights Neustar-developed and third-party systems and proactive processes in place to ensure high performance and availability of the NPAC/SMS.
- **Proposal Section 1.2.4 System Recovery and Backup** outlines the systems and processes in place to ensure continued availability of the NPAC service to the Industry in the event of an outage.

Neustar's experience and expertise as the LNPA provides a solution to the Industry that continues to deliver excellence. Our staff is dedicated to providing the highest quality service to the communications Industry. We will continue to sustain and improve our exceptional performance, and deliver new value to Service Providers, in the next term.

1.2.1 NPAC/SMS Architecture

The Industry has high expectations for immediate, secure, and available NPAC/SMS service in an environment of rapid change. Service Providers have come to expect the NPAC/SMS to operate to the same high standards of their critical network infrastructure and operations support systems.

Neustar has built our solution architecture in a modular fashion, through the efforts of our application engineers, network engineers, security engineers, database administrators, storage experts and operations staff. The solution is divided into five Layers described in this section. This allows our experts to focus on their specific area of responsibility, and allows changes to be delivered effectively and efficiently.

Neustar will continue to provide the Industry the highest levels of service they have come to expect. We will continue to improve the architecture solution to meet, exceed and anticipate the needs of the Industry as the communications landscape continues to evolve. Neustar designed the NPAC solution to be highly available, support high demand, be scalable and modular, and be highly secure. Table 1.2.1-1 demonstrates how we have architected the system to meet/exceed the requirements of the Industry.

Table 1.2.1-1. Meeting/Exceeding Industry Requirements

Requirement	Design
High availability	• Redundancy and survivability at all Layers of the architecture • Stable application software design and quality assurance processes • Robust operational practices • High quality and experienced engineering and operations staff • Platform testing at 4X production load • Automated failover processes to meet new SLR 1 requirements
[redacted]	Security-Related Information
Scalable and modular for new features and functionality	• Modular hardware and software design • Finely tuned hardware and software architecture • Layered architecture • Optional data fields
Security-Related Information	[redacted]

neustar
Real Intelligence. Better Decisions.

Security-Related Information

2. Security-Related Information

3. Security-Related Information

4. Security-Related Information

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