Tier 2 Trouble Ticket Handling Process

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Purpose and Scope

This document describes the process used by Tier 2 support to handle trouble tickets related to the NPAC SMS. This document also describes the Service Level Requirements (SLRs) and internal Service Level Agreements (SLAs) that are impacted by effectively handling trouble tickets.

Related Documents

- "NPAC SMS Defect Severity Levels", available on the secure NPAC web site
- "NPAC Trouble Ticketing Process", created and maintained by NPAC Help Desk
- "On Call Schedule"
- "Multiple Tickets M&P for the USA Group", created and maintained by NPAC Help Desk
- "Outage Communications Internal / External", created and maintained by NPAC Service Delivery group
- "NPAC/SMS Cutover Decision Process", created and maintained by IT&S
- "Statement Of Work ForT/N Price Reduction And Contract Update And Extension", also known as SOW 25
- "Agreement For Number Portability Administration Center/Service Management System", also known as the Master Contract

Procedure for Service-affecting Issues Called Into NPAC Help Desk

This procedure applies for service-affecting(SA) issues documented in Priority 1 and 2 tickets.

0mins

1. A User Support Analyst (USA), referred to as the agent, at the NPAC Help Desk receives a call and creates a trouble ticket according to the "NPAC Trouble Ticketing Process" document. For SA issues that occur after business hours, the primary or secondary on-call USA is the agent.

   The agent pages the relevant tier 2 support group for service affecting (SA) tickets; only the primary and secondary on-call support engineer (SE) are paged for after hours issues. The agent and the SE work together, possibly with the customer, to close out the trouble ticket.

NOTE Notify your group lead or manager if more than 2 priority 1 or 2 tickets have been created within a short period of time for related issues. The lead or manager contacts the Help Desk to create a master ticket with SPID 000. Your group is then responsible for updating the status only on the master ticket.

2. The manager of the group identifies a SE as the point of contact (POC) within the group to coordinate troubleshooting. Some tier 2 support groups have POCs already identified for all shifts in the on-call list.

3. This SE is assigned as owner of the ticket and is responsible for updating the ticket status.

4. The SE or the manager briefly verifies the issue and investigates its scope.

NOTE If a regional outage is discovered at any point during troubleshooting, the SE or the USA must call or page the Director of NPAC Operations, Manager of the NPAC Help Desk, or the Director of Service Delivery to notifiy them of the outage within 5mins of its discovery. This 5min status requirement is an internal SLA, "Regional Outage – Notify Help Desk within 5mins of discovery", which is described on page 9.

15mins

5. The SE or manager updates the Action text in the ticket with a brief, customer-ready description of the issue in bullet point format. This update should be provided within 15 minutes of the ticket being assigned to the group but must be performed within 40mins of the ticket being assigned and every 40mins after the initial statusing until the ticket is resolved. This 40min status requirement is an internal SLA, "Time to Status SA Tickets", which is described on page 9.

   If possible, include the following information the the action text in the ticket:

   - the service impacting condition
   - whether or not the condition is a regional outage
   - regions impacted
   - number of customers impacted
   - estimated amount of time to resolve issue

- the name and phone number of the customer POC if the SE is in direct contact with a customer POC other than the one that initiated the ticket

The information provided is used by agent to update the customer POC who initiated the ticket on the status of the issue.

6. The SE or the manager establishes the internal conference bridge listed on the Tier 2 "On-call Schedule". This conference bridge is used by the team to communicate troubleshooting information during outage and service-affecting issue resolution.

7. Issue troubleshooting and resolution is conducted by the team and the "NPAC Cutover Decision Flow" is followed. For details about resolution procedures, see "Issue Resolution Procedure" on page 7.

55mins 8. Within 40mins from the time of the initial update, the SE updates the trouble ticket, providing additional information listed in item 5 and any other information that needs to be communicated to the customer contact that initiated the ticket. This 40min status requirement is an internal SLA, "Time to Status SA Tickets", which is described on page 9.

1hr 9. The agent updates the customer contact that initiated the ticket with any additional information provided by the SE in the ticket.

10. Service Delivery team updates an internal audio response every 30 minutes from this point forward with the information provided in the trouble ticket (requested in item 5) and additional information that directly addresses the service impacting event. This audio response system is made available to the high-level internal escalation points only.

11. Service Delivery team updates an external audio response every 60 minutes from this point forward with the information provided in the trouble ticket (requested in item 5) and additional customer-specific information.

1hr 35mins 12. The SE must update the trouble ticket within 40mins of the previous ticket update, providing additional information listed in item 5 and any other information that needs to be communicated to the customer. This 40min status requirement is an internal SLA, "Time to Status SA Tickets", which is described on page 9.

2hrs 13. The Service Delivery team sends a cross regional email stating the time and information for an audio bridge. This conference call is intended to address the customers in an open forum outlining in greater detail the events and allows for a brief question/answer period. The Director of Service Delivery coordinates the call. Additional follow up conference calls will be held in a timely manner until the outage is resolved.

2hrs 5mins 14. The agent updates the customer contact that initiated the ticket with any additional information provided by the SE in the ticket.

12hrs

15. The POC handling the ticket or the POC's manager or group lead must provide preliminary root cause analysis (RCA) information to the Director of Service Delivery within 12-24 hours of an outage. This information should also be documented in the action text portion of trouble tickets.

    RCA and corrective action information are provided to the industry by NeuStar as part of SOW 25. The specific requirement to be met is GEP 5.

16. The Director of Service Delivery prepares the official preliminary root cause analysis for the outage using information provided by the POC or group manager.

24hrs

17. The Director of Service Delivery emails the preliminary RCA to the industry distribution list and posts the RCA on the secure NPAC site.

18. The group manager or POC continues providing RCA and corrective action information in a timely manner until a final root cause and corrective action are determined. The extended timeline for delivery of this information is based on the time the initial RCA was delivered, as follows:

    - Definitive RCA or RCA Follow-up: 5 business days following initial RCA or 5 business days + 25 hours following outage detection. RCA follow-ups must be issued every 5 business days until a definitive RCA is issued.
    - Corrective Action Plan: 10 business days after the preliminary RCA (even if not issued) or the definitive RCA.

Procedure for Service-affecting Issues Detected Internally

This procedure applies for issues detected by Tier 2 support internally that affect external customers and are service-affecting (SA).

0mins

1. The SE briefly investigates the issue, assessing the following:
   - regions impacted
   - scope of association outage as reported by the http://maple.npac.com web site

5mins

2. Call or page the Director of NPAC Operations, Manager of the NPAC Help Desk, or the Director of Service Delivery and notify them of the outage. Ask that a trouble ticket be created with SPID 0000 and provide them with an assessment of the outage scope. This 5min status requirement is an internal SLA, "Regional Outage – Notify Help Desk within 5mins of discovery", which is described on page 9.
3. The ticket is assigned to the SE who places the call and that SE is responsible for statusing the ticket.
4. Contact your group lead/manager or escalate to the Director of IT&S if the lead/manager cannot be reached.
5. The SE or the manager establishes the internal conference bridge listed on the Tier 2 "On-call Schedule". If your team has identified an SE to handle all outage coordination, contact that SE to establish the bridge. This conference bridge is used by the team to communicate troubleshooting information during outage and service-affecting issue resolution.
6. Begin working on the problem and proceed using the same process described in "Procedure for Service-affecting Issues Called Into NPAC Help Desk" beginning with item 7 on page 3.

Procedure for Non-service-affecting Issues Called Into NPAC Help Desk

This procedure applies for non-service-affecting (NSA) Priority 3 and 4 tickets .

0mins

1. The NPAC Help Desk receives a call and creates a trouble ticket according to the "NPAC Trouble Ticketing Process" document and pages the relevant tier 2 support group.

   On after-hours non-SA calls, both primary and secondary SE is alerted by pager both via email and manual page. In cases where the customer agrees, non-SA issues may be left open overnight to be resolved during regular business the next day.

2. The manager of the group identifies a support engineer (SE) as the point of contact (POC) within the group to coordinate troubleshooting. Some tier 2 support groups have POCs already identified for all shifts in the on-call list.

3. This SE is assigned as owner of the ticket and is responsible for updating the ticket status.

4. The SE verifies the issue, investigates its scope, and attempts issue resolution.

2hr 40mins

5. The SE updates the action text in the ticket with a brief, customer-ready description of the issue in bullet point format. If possible, include the following information:
   - the condition causing the issue
   - regions impacted
   - number of customers impacted
   - estimated amount of time to resolve issue

   The information provided is used by USAs to update the affected customers on the status of the issue.

6. Each day following ticket creation, the SE updates the ticket with any additional information requested above and any progress toward issue resolution. Issue resolution should be performed as described in "Issue Resolution Procedure" on page 7.

Issue Resolution Procedure

When the trouble ticket is due to a issue on the customer side, Tier 2 support teams attempt to diagnose the customer issue and, if possible, suggest a high-level resolution for the issue.

When the trouble ticket is due to a issue on the NPAC side, follow the steps below.

1. The Tier 2 support teams develop a fix for the issue and test it internally. If necessary, a point release is proposed to the industry and the defect is posted on the secure NPAC web site.
2. The group lead and/or group manager must review and approve the resolution.
3. The POC handling the ticket must document the resolution in the trouble ticket, change the ticket status to Verify, and notify the USA.
4. The USA notifies the customer, gains customer's approval of closure, documents the approval in the ticket, and closes the trouble ticket.

Note that for outages, root cause analysis and corrective action plans must be provided as described in Steps 15-18 in "Procedure for Service-affecting Issues Called Into NPAC Help Desk" on pages 4-4.

Service Level Measurements

The ability of IT&S to handle and status production issues is measured by the SLRs and SLAs described in this section. The results of these SLRs and SLAs are reviewed during the Monthly Operations Review (MOR) by NeuStar executive management. The SLR and SLA results are also used as part of NeuStar's employee Performance Management program.

SLR 1 - Availability of NPAC SMS service by region

Requirement is 99.9% uptime; 44mins of downtime or less in a region before SLR 1 dips below 99.9%. Credits given to customers per region for a miss:

>99.85% but <99.90%	$2,000;
>99.80% but <99.85%	$4,000;
>99.75% but <99.80%	$6,000;
>99.70% but <99.75%	$8,000;
>99.65% but <99.70%	$10,000;
>99.60% but <99.65%	$12,000;
<99.60%	$14,000

GEP 1a - Number of SLR 1 misses in a year by region

3 inconsecutive misses, 2 consecutive misses are a failure and result in $.01 TN price reduction for 1yr (roughly $250K) and possible loss of the contract.

SLR 7 - Interface availability per customer, per region

Requirement is 95% of customers in a region have 99.9% interface availability. 44mins of downtime or less per customer before SLR 7 dips below 99.9%.

Example: Canada has about 7 mechanized customers with dedicated connections. If 1 customer has an SLR 7 miss, the entire region has an SLR 7 miss and it that miss counts against GEP 1b.

Credits given to customers per region for a miss:

>99.85% but <99.90%	$2,000;
>99.80% but <99.85%	$4,000;
>99.75% but <99.80%	$6,000;
>99.70% but <99.75%	$8,000;
>99.65% but <99.70%	$10,000;
>99.60% but <99.65%	$12,000;
<99.60%	$14,000

GEP 1b - Number of SLR 7 misses in a year by region

3 inconsecutive misses, 2 consecutive misses are a failure and result in $.01 TN price reduction for 1yr (roughly $250K) and risk loss of contract

SLR 8 - Cutover Time

10mins to cutover to back up. If it takes more than 10 minutes, there is a $5,000 credit given to the customers per event.

Time to Resolve Outages

An internal measurement for resolving regional outages within 60minutes.

Regional Outage – Notify Help Desk within 5mins of discovery

An internal SLA that assists the Help Desk in meeting SLR 22, Unscheduled Service Unavailability Notification, which states that the users must be notified within 15 minutes of an outage being detected.

Regional Outage – Provide Help Desk update within 30mins of discovery

An internal SLA that assists the Help Desk in meeting SLR 23, Unscheduled Service Unavailability Notification, which states that the users must be provided with outage updates every 30 minutes after the outage is detected.

Time to Status SA Tickets

An internal SLA for statusing SA tickets in under 40 minutes (.67 hours). This is a monthly average of update times on priority 1 and 2 tickets. This SLA supports the Help in meeting their internal SLA for statusing 95% of SA tickets within an hour.

Document History

Table 1 Document Approval

Name	Role	Signature	Date
	Project Manager		
	Project Leader		
	Technical Lead		
	Author		

Table 2 Revision History

Version	Date	Change Author	Description of Change
1.0	11 June 2001	Mandy Kinne	Initial version