# NICE IEX WFM

# Historical Multi-Media Interface Design Specification

for

*Mitel*

with

*Solidus 9.x*

**Date: May 9, 2016**
**Document Version 4.11**

# Revision History

| Date | Rev | Author | Description |
|------|-----|--------|-------------|
| | | | |
| Jul 8, 11 | 3.2 | Bo Stenlund (Aastra) | Aastra updates. This version taken from Template 3.1 |
| Jul 13, 2011 | 4.0 | Rob Duplantis (IEX) | Further updates after review of Aastra's edits. |
| Aug 4, 2011 | 4.1 | Bo Stenlund (Aastra) | Further updates based on comments received |
| Aug 23, 2011 | 4.2 | Rob Duplantis (IEX) | Further updates after review of Aastra's edits. Particular attention to the reporting of Ready Time and NotReadyTime in sections 11.2 and 13. |
| Aug 26, 2011 | 4.3 | Rob Duplantis (IEX) | Modification of Ready Time and NotReadyTime in sections 11.2 and 13. Added Appendix B – Aastra's distribution function of Ready and NotReady. |
| Aug 29, 2011 | 4.4 | Rob Duplantis (IEX) | Section 11.1 – modified Vendor Data Source for the *Distributed* data element. |
| Aug 30, 2011 | 4.5 | Rob Duplantis (IEX) | 11.2 - modified Vendor Data Source for the *ReadyTime* data element<br>11.2 - modified Vendor Data Source for the *NotReadyTime* data element<br>11.3 - modified Vendor Data Source for the *InternalTime* data element<br>Accepted All Changes in document. |
| Jan 8, 2014 | 4.6 | Rob Duplantis (IEX) | Section 14 - Sample Files updated |
| Apr 4, 2014 | 4.7 | Rob Duplantis (IEX) | Now supporting Outbound Dialer statistics. Note: existing report format does not change. |
| Aug 19, 2014 | 4.8 | Pam Elliott (Aastra/Mitel) | Updated 11.2 – Agent Queue Data Handle Time, Hold Time and Work Time source value calculations. |
| Dec. 4, 2014 | 4.8.1 | Pam Elliott (Aastra/Mitel) | Updated 11.2 – Agent Queue Data Handle Time requested to be derived from Servicing report value instead of Handling value |
| Dec. 4, 2014 | 4.9 | Pam Elliott (Mitel) | Updated revision to Solidus 9.0 and modified Aastra to Mitel. |
| Mar. 4, 2015 | 4.10 | Pam Elliott (Mitel) | Further naming updates due to Solidus rebranding |
| Jan. 29, 2016 | 4.11 | Anne Kavanagh (Mitel) | Updated release to 9.x (from 9.0). |
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# NICE IEX WFM Configuration Information

(To be completed by IEX engineering)

| | | |
|---|---|---|
| Vendor Product and Version | Mitel Solidus 7.0 | Supporting Solidus 7.0 and greater. |
| NICE IEX WFM Version | 4.X | |
| Interface Reports | Custom VENDOR reports | |
| Historical Statistics Interval Setting | 15 or 30 | Configurable |
| File Delivery Method | FTP | |
| | | |
| Skills | Yes | |
| RTA | Yes | Reason Codes supported |
| Inbound Voice | Yes | Mitel Solidus 7.0 |
| Outdialer | Yes | Mitel Solidus 7.0 |
| Email | Yes | Mitel Solidus 7.0 |
| Chat | Yes | Mitel Solidus 7.0 |
| Fax | Yes | Mitel Solidus 7.0 |
| Text (SMS) | Yes | Mitel Solidus 7.0 |
| | | |
| NICE IEX WFM Queue = | VENDOR Solidus Service Group Name | Within Solidus, a Service Group may only be defined to one media type (ex: email, voice, chat, outdialer, etc). |
| NICE IEX WFM Agent Logon ID = | VENDOR Solidus User Login ID | |
| NICE IEX WFM Queue max length = 40 | VENDOR max length = 20 | |
| NICE IEX WFM LogonID max length = 40 | VENDOR  max length = 20 | |
| | | |
| Contacts pegging | Pegged to terminating interval | |
| Contact Time Values | Pegged to terminating interval | |
| Historical Adherence (Reasons Codes) | RTA used as source for Historical Adherence. | Reason Codes supported |
| Time Zone(s) | | |
| Site Name(s) | | |

# NICE IEX WFM – *Mitel Solidus 7.0 (and greater)*
# Historical Interface Design Specification


**SYSTEM**:  NICE IEX WFM Workforce Management
**VENDOR**:  *Mitel Solidus 7.0 (and greater)*
**CUSTOMER**: *<Customer Name>*


## Enhancement Note
*As of 4/4/14, document revision 4.7, this integration application now supports Outbound Dialer statistics.  The existing report format did not change to accommodate the introduction of Outbound Dialer statistics.*


## Overview

This document is to provide a technical description of a historical statistics interface integration design between the NICE IEX WFM and the *Mitel Solidus 7.0 (and greater)*

Custom historical reports have been developed by VENDOR and are made available to mutual customers who wish to integrate the NICE IEX WFM Workforce Management system to the VENDOR system in a multimedia Contact Center environment. The VENDOR system sends the historical data to NICE IEX WFM in a single file. Each interval file is deposited on the NICE IEX WFM Server in a designated directory.

Three custom historical reports are provided by VENDOR and made available to the NICE IEX WFM system from the VENDOR system, in a single file. These reports containing specific interval-based historical statistics are sent from the VENDOR system and received on the NICE IEX WFM server in a designated directory.  These reports are received every interval (15 or 30 minutes), shortly after the interval ends. The NICE IEX WFM server receives these reports 24 hours a day, 7 days a week.  If no data is available for a particular interval, then each report within the file contains either one zero-filled record.

Each interval, three interval reports are generated by the VENDOR system. The **Queue Report**, which contains statistics for each VENDOR Service Group, the **Agent-Queue Report** which contains Agent statistics for each Service Group in which they exercised activity, and the **Agent System Performance Report** which reports Agent statistics that cannot be reported by Queue.

Below is a detailed description of each historical interface report, as well as the interfacing method between the two systems.


## Section 1 – Data Reception Methods
**Network Interface Connection**
Each interval report sent from the VENDOR system (the **Queue Report,** the **Agent-Queue Report**, and the **Agent System Performance Report**) is formatted within an ASCII file and

delivered to the NICE IEX WFM server, via File Transfer Protocol (FTP), to a predetermined directory.  The directory to which these files are delivered is:
/ftp/switches/<acdid#>

Where <acdid#> is the ACD Link Identification Number for this particular interface link, as defined within the NICE IEX WFM system.

The Contact Router vendor most commonly uses anonymous FTP.  Authenticated FTP (which requires a user selectable ftp login and password) is also available upon CUSTOMER's request.

# Section 2 – Integration Reporting per ACD/Site

The NICE IEX WFM server is a single server that may provide Workforce Management for a customer that has multiple Contact Routers and/or multiple Contact Center sites.  Therefore a single NICE IEX WFM server is capable of receiving separate integration report sets from multiple Contact Router systems.

VENDOR system sends one report set each interval to the NICE IEX WFM server representing the CUSTOMER's entire contact routing environment visible by this particular VENDOR system.  If the CUSTOMER has multiple VENDOR systems, then one report set is sent from each VENDOR system to the NICE IEX WFM server. Each VENDOR system report set is identifiable as independent ACD Links within NICE IEX WFM.  *See Section 1 of this document for details regarding NICE IEX WFM ACD Link identification.*

# Section 3 –  Interface Report Contents

Each VENDOR Interface report that is delivered to the NICE IEX WFM server each interval contains four basic components:
-   A unique header
-   A date and time of the reported interval
-   Rows of data as described in this document
-   A unique trailer

(*See Section 14, Sample VENDOR Reports Sent to NICE IEX WFM*)

# Section 4 – Interface Report File Naming Convention

The VENDOR interface reports for each interval are concatenated by the VENDOR system into a single file with the naming convention as follows:
**MMDDYY.HHMM**  (example:  122511.1330)
In the example above, 122511.1330 represents the reporting interval span between 01:30PM and 02:00PM on December 25, 2011.

This convention is used to guarantee unique file naming for each set of interval reports.  This is to allow multiple interval files to reside in a directory simultaneously.  This could occur if CUSTOMER is manually requesting several past/missing interval statistics at once, or if the NICE IEX WFM interface program is interrupted for a period of time (*See Section 10, Method of Re-*

*Sending Data*).  If multiple interface report files exist in a single directory, the NICE IEX WFM interface application reads and processes each file until all have been completed.

# Section 5 – Report Order within the NICE IEX WFM Interface File

The three mandatory interval reports (Contact Queue, Agent-Contact Queue, and Agent System Performance) may appear within the concatenated report file in any order.

# Section 6 – Supported Intervals and Statistics

NICE IEX WFM is capable of supporting 15-minute or 30-minute interval granularities with the VENDOR system.  This selection is user-configurable on both systems and must be determined before the interface installations. These reports are received 24 hours a day, seven days a week.

The reports from the VENDOR system contain Contact and Agent historical statistics that represent summary activity, which occurred during a single interval.  By convention, these reports are delivered to the NICE IEX WFM server within 10 minutes after the completion of each interval.  These reports are received 24 hours a day, seven days a week.  The statistics within the reports represent activity that occurred during one particular interval time span regardless of contact routing system activity (closed queues etc.).  If no data is available for a particular interval, then each report within the file contains one zero-filled record.

Contact related statistics (Inbound Call, Inbound Email, Chat, etc.) are reported to the interval in which the contacts *terminate*. For example, if 30-minute interval is used, a contact that begins at 9:15 and terminates at 9:45 would be pegged as handled in the 9:30 - 10:00 interval.  All time related elements (such as Handle Time, and After Contact Work Time) are also reported to the interval of which they *terminate*. For example, the total Handle Time of a contact that begins at 9:15 and ends at 9:45 is pegged to the 9:30 – 10:00 interval.  Likewise, the total After Contact Work Time (ACW) is pegged to the interval in which it *terminates*.

Login Time is the actual time that occurred during the reported interval.  Thus, it may never exceed the interval length.

See section 11.2 and 13 for details regarding the reporting of ReadyTime and NotReadyTime.

# Section 7 - Report Field Delimiters and Line Terminators

An ASCII new-line character (decimal 10) terminate each line within the reports.

Values do not have the thousands place separated by commas or any other delimiter.

The fields within the data lines of each report are delimited by a comma (,) character.

# Section 8 - Time and Time Zones

All references to time within the Solidus interface reports are in the time zone of the Solidus server.

# Section 9 – Error-Handling

Concatenated interface report files that are successfully processed by the NICE IEX WFM interface application are deleted from the /ftp/switches/<acdid#> directory by the NICE IEX WFM interface application.  If any major errors occur while the NICE IEX WFM interface application processes the reports, the interface files are marked with a *.err* extension and left in the /ftp/switches/<acdid#> directory.   Example: **122511.1330.err**

These error files may be used by NICE IEX WFM Technical Support to analyze the interface problem.  After resolution, NICE IEX WFM Technical Support is responsible for deleting the error files in question.

# Section 10 – Method of Re-Sending Data

There are times when the interval data is not received by the NICE IEX WFM system due to network issues, link issues, etc. In these situations, CUSTOMER must manually upload the report files to the IEX server. In case of un-successful FTP transfer then the report file will be stored on the Solidus server, in the NextccReport$ shared folder.   If the Solidus report was never generated due to technical issues, then the report file may not be recovered. In this case the customer should update the missing statistics from within the Adjust History screen within IEX WFM.

# Section 11 –  Interface Report Data Requirements

## 11.1  Queue Data

Queue data represents data from the **Solidus Service Group**.

**Record Sort Order:** The records within this report are sorted by Queue ID.

**Report Contents:**
The necessary data that NICE IEX WFM requires at this level is as follows:

*Header –* This is a unique identifier that indicates the beginning of the Queue data.  It is the name of the report (example:  *QUEUE REPORT*)

*Date/Time –* This date and time represents the beginning time of the reporting interval for the data being received (example**:** *12/25/11 13:30*).

*Data Items -*
Contact Queue Identifier - [NICE IEX WFM valid range = 1 to 40 ASCII characters].
                              [VENDOR system valid range = 1 to 20 alpha-numeric characters

This represents the Contact Router Contact Queue identifier.
(Mandatory Field– used as record key)

VENDOR data source: dbo.service_group.name

Received Contacts - [NICE IEX WFM valid range = 0 - 65000]. For *Immediate Response* type contacts this equates to the number of Handled Contacts + Abandoned Contacts *ended* during this interval on this Contact Queue. For *Deferrable Response* type contacts this equates to the number of Contacts that have entered the Contact Router system and completed during this interval on this Contact Queue.  For *Outbound Dialer* type contacts a 0 (zero) may be reported by VENDOR, or this equates to the number of Handled Contacts that *ended* during this interval on this Contact Queue.

VENDOR data source: Service Group->Received->Direct + Service Group->Received->Overflowed In

Handled Contacts - [NICE IEX WFM valid range = 0 - 65000]. This is the number handled contacts which ended during this interval on this Contact Queue.

VENDOR data source: Service Group->Session Summary->Answered

Abandoned Contacts - [NICE IEX WFM valid range = 0 - 65000]. This is the number of contacts that were abandoned on this Contact Queue during this interval.  For *Outbound Dialer* type contacts a 0 (zero) may be reported by VENDOR.

VENDOR data source: Service Group->Session Summary->Abandoned (Sum of calls or chats during queuing or alerting)

Handled within Grade of Service – [NICE IEX WFM valid range = 0 - 65000]. This is also known as *Short Handled*. This is the number contacts which ended during this interval and were handled within a particular grade of service time. The actual grade of service time threshold is determined by the Contact Router system. The NICE IEX WFM interface application will derive *Long Handled* (Handled After Grade of Service) by subtracting *ShortHandled* from *Handled Contacts*.
For *Outbound Dialer* type contacts a 0 (zero) may be reported by VENDOR.
(Used by NICE IEX WFM to calculate *Service Level* for *Immediate Response* type contacts . Used by NICE IEX WFM for custom reporting in *Deferrable Response* type contacts.  Not Used for *Outbound Dialer* type contacts).

VENDOR data source: Service Group->Sessions Answered->In Service Level

Short Abandoned– [NICE IEX WFM valid range = 0 - 65000]. This is also known as *Abandoned before Grade of Service*. This is the number of contacts abandoned prior to a specific time threshold of which the customer or vendor view as "short abandoned". The specific time threshold is determined by the Contact Router system.   For *Outbound Dialer* type contacts a 0 (zero) may be reported by VENDOR.

VENDOR data source: Not available

Long Abandoned– [NICE IEX WFM valid range = 0 - 65000]. This is also known as *Abandoned after Grade of Service*. This is the number of contacts abandoned during this interval

that were abandoned after a particular grade of service time. The actual grade of service time threshold is determined by the Contact Router system.   For *Outbound Dialer* type contacts a 0 (zero) may be reported by VENDOR.

VENDOR data source: Not available

Handle Time – [reported as seconds; NICE IEX WFM valid range = 0 - 2147483647]. This is the handle time (plus Hold Time for voice contacts) of handled contacts that ended during this interval on this Contact Queue.

The Handled Time (Talk Time) is derived by Solidus as the *start* of the event until the *end* of the event.  Solidus does not recognize the focus time of desktop windows to determine when agents are active on specific contacts when they are multitasking (handling more than one contact simultaneously).  Thus Handle Time (and therefore AHT (Average Handle Time)) will represent the total handle time for contacts, even when certain contacts are happening simultaneously for an agent due to multitasking.  This may occur if agents handle more than one chat at a time, or as an example when agents are handling either a chat or email while taking a voice call.

VENDOR data source: Service Group->Session State Duration->Servicing + Service Group->Session State Duration->On Hold

Hold Time – [reported as seconds; NICE IEX WFM valid range = 0 - 2147483647]. This is the HoldTime (the total amount of time the customer was placed on Hold) of handled contacts that ended during this interval on this Contact Queue.

VENDOR data source: Service Group->Session State Duration->On Hold

Work Time – [reported as seconds; NICE IEX WFM valid range = 0 - 2147483647]. This is the total After Contact Work (or WrapUp) Time that occurred against handled contacts that ended during this interval on this Contact Queue.

VENDOR data source: Service Group->Session State Duration->Clerical

Distributed – [NICE IEX WFM valid range = 0 - 65000]. This is the number of Contacts distributed to Agents during this interval on this Contact Queue.

VENDOR data source: Service Group->Session Summary->Answered _ Service Group ->Abandoned at->Alerting

Queue Delay Time – [reported as seconds; NICE IEX WFM valid range = 0 - 2147483647]. This is the total Contact Delay Time (Queue Time) on this Contact Queue before the contacts are distributed to agents during this interval.  For *Outbound Dialer* type contacts a 0 (zero) may be reported by VENDOR.
(Mandatory Field for *Immediate Response* and *Deferrable Response* type contacts. (Not Used for *Outbound Dialer* type contacts)
Used in NICE IEX WFM reporting to derive Average Speed of Answer (ASA))

VENDOR data source: Service Group->Queue Duration->Answered

Service Level – [NICE IEX WFM valid range = 0 - 10000]. *NOTE: Since Service Level is stored in NICE IEX WFM with accuracy to 2 decimal places; the value reported in this field should be multiplied by 100. This eliminates the need to parse a decimal indicator. Example, a service level of 95.5% is reported as 9550 within this interface report.* The actual Service Level Threshold is determined per Contact Queue by the Contact Router system.

(Not Used for *Immediate Response* or *Outbound Dialer* type contacts)
(Mandatory for *Deferrable Response* type contacts)

**Note:**  For *Immediate Response* related Contact Queues the NICE IEX WFM integration program uses *Handled within Grade of Service*, *Handled*, and *Abandoned* to calculate Service Level percent within the NICE IEX WFM system. For *Deferrable Response* related Contact Queues, the NICE IEX WFM integration program uses this *Service Level* field to populate Service Level percent within the NICE IEX WFM system.

For *Immediate Response*  related Contact Queues (such as Voice), this is the percentage of contacts that were answered on or before the service level threshold during this interval on this Contact Queues.

For *Outbound Dialer* type contacts a 0 (zero) may be reported by VENDOR.

VENDOR data source: Service Group->Service Level->Service Level (%)

Backlog: [NICE IEX WFM valid range = 0 – 65000]

This is the total number of contacts received in previous intervals for the Contact Queue that have not been worked / completed / handled / abandoned.

VENDOR data source: Not Available

Backlog not yet Expired: [NICE IEX WFM valid range = 0 – 65000]

This is the total number of contacts received in previous intervals for the Contact Queue that have not been worked / completed / handled / abandoned and have not yet "aged" past a specified time limit. The service threshold has *not* passed for these contacts. These contacts may still be worked in future periods and the service level objective may still be achieved.

**Note:**  While not mandatory, *Backlog Not Yet Expired* and *Backlog Expired* are two data items that enhance the functionality of NICE IEX WFM Intraday Management within Multimedia environments.

VENDOR data source: Not available

Backlog Expired: [NICE IEX WFM valid range = 0 – 65000]

This is the total number of contacts received in previous intervals for the Contact Queue that have not been worked / completed / handled / abandoned before the designated acceptable time limit. The service threshold has passed for these contacts. These contacts may still be worked in future periods but the service level objective will *not* be achieved.

**Note:**  While not mandatory, *Backlog Not Yet Expired* and *Backlog Expired* are two data items that enhance the functionality of NICE IEX WFM Intraday Management within Multimedia environments.

VENDOR data source: Not Available

***Trailer -*** This is a unique identifier that indicates the end of the Queue data
(example:  *END QUEUE REPORT*)

## 11.2  Agent Detail Data (Agent-Queue)

Agent Detail data represents each Agent's activity on a particular Solidus **Service Group** during the reporting interval.

Special Note:
- An Agent may have multiple records on this report if they have activity on more than one VENDOR Queue during one interval.

**Record Sort Order:** The records within this report are sorted by:
1) Queue ID
2) Agent ID

**Report Contents:**
The necessary data that NICE IEX WFM requires at this level follows:

***Header -*** This is a unique identifier that indicates the beginning of the Agent Detail data.  It is usually the name of the report (example:  *AGENT-QUEUE REPORT*)

***Date/Time -*** This date and time represents the beginning time of the reporting interval for the data being received (example:  *12/25/11 13:30*).

***Data Items -***
Contact Queue Identifier - [NICE IEX WFM valid range = 1 to 40 ASCII characters].
                    [VENDOR system valid range = 1 to 20 alpha-numeric characters

This is the Contact Queue on which the following Agent activity occurred during this interval.
(Mandatory Field - used as a record key)

VENDOR data source: dbo.service_group.name

Agent ID - [NICE IEX WFM valid range = 1 to 40 ASCII characters].
          [VENDOR system valid range = 1 to 20 alpha-numeric characters

This is equivalent to the VENDOR system Agent Logon ID value.

The following characters are not allowed within the Agent ID  (&) (|) (\).
(Mandatory Field - used as a record key)

VENDOR data source: dbo.cc_user.logon_id

Handled Contacts - [NICE IEX WFM valid range = 0 - 65000]. This is the number of contacts finished by this Agent on this Contact Queue during this interval.

VENDOR data source: Agent Activity->#  of sessions->Answered

Handle Time – [reported as seconds; NICE IEX WFM valid range = 0 - 2147483647]. This is the total handle time (plus Hold Time for voice contacts) that occurred during this interval for this Agent on this Contact Queue.

> The Handled Time (Talk Time) is derived by Solidus as the *start* of the event until the *end* of the event.  Solidus does not recognize the focus time of desktop windows to determine when agents are active on specific contacts when they are multitasking (handling more than one contact simultaneously).  Thus Handle Time (and therefore AHT (Average Handle Time)) will represent the total handle time for contacts, even when certain contacts are happening simultaneously for an agent due to multitasking.  This may occur if agents handle more than one chat at a time, or as an example when agents are handling either a chat or email while taking a voice call.

> VENDOR data source: Agent Activity->Session State Duration->Servicing + Agent Activity->Session State Duration->On Hold

Hold Time – [reported as seconds; NICE IEX WFM valid range = 0 - 2147483647]. This is the HoldTime (the total amount of time the customer was placed on Hold) of handled contacts that occurred during this interval for this Agent on this Queue.

> VENDOR data source: Agent Activity->Session State Duration->On Hold

Work Time – [reported as seconds; NICE IEX WFM valid range = 0 - 2147483647]. The total time in which the Agent spent in a *Work* state (After Contact Work or WrapUp) during this interval for previously handled contacts on this Contact Queue.

> VENDOR data source: Agent Activity->Session State Duration->Clerical

Ready Time – [reported as seconds; NICE IEX WFM valid range = 0 - 2147483647]. The total time the Agent spent in *Ready* state (available and ready to receive contacts) while logged in during this interval. This value should not exceed the interval length for a particular agent.
Mitel Solidus agents have the ability to control their Ready state by media type.  When an agent is in a READY state for a particular media type, this amount of READY time is reported on each queue associated with that media type within the Solidus reporting system.  To avoid this type of reporting of Ready time to IEX WFM the Solidus development team will perform a distribution function to the ReadyTime values prior to transmitting these data elements to IEX.  *See Appendix B for details regarding the Solidus Distribution Function.*

> VENDOR data source: Agent Activity->Duration->Voice idle/Message idle/Chat idle (depending of type of queue)

Not Ready Time – [reported as seconds; NICE IEX WFM valid range = 0 - 2147483647]. The total time the Agent spent in a *Not Ready* state (sometimes called *Idle*) while logged in during this interval. The *Not Ready* state is the time an agent is logged in, not available to receive contacts, and not in a work related state. It can possibly be used for personal

time. Note that this value should not include any After Contact Work activity. This value should not exceed the interval length for a particular agent.

Mitel Solidus agents have the ability to control their NotReady state by media type. When an agent is in a NOTREADY state for a particular media type, this amount of NOTREADY time is reported on each queue associated with that media type within the Solidus reporting system.  To avoid this type of reporting of NotReady time to IEX WFM the Solidus development team will perform a distribution function to the NotReadyTime values prior to transmitting these data elements to IEX.  *See Appendix B for details regarding the Solidus Distribution Function.*

VENDOR data source: (Agent Activity->Duration->Logged in) – ((Agent Activity->Duration->Voice idle/Message idle/Chat idle (depending of type of queue) + (Agent Activity->Duration->Voice busy/Message busy/Chat busy)))

***Trailer -*** This is a unique identifier that indicates the end of the Agent-Queue data. (Example:  *END AGENT-QUEUE REPORT*)

## 11.3  Agent System Performance Data

This report contains Agent data elements that can't be reported on a particular VENDOR Queue, in the above-mentioned Agent-Queue Report, during the reporting interval.

**Record Sort Order:** The records within this report are sorted by:
1) Agent ID

**Report Contents:**
The necessary data that NICE IEX WFM requires at this level follows:

***Header -*** This is a unique identifier that indicates the beginning of the Agent System data.  It is usually the name of the report (example:  *AGENT SYSTEM PERFORMANCE REPORT*)

***Date/Time -*** This date and time represents the beginning time of the reporting interval for the data being received (example:  *12/25/11 13:30*).

***Data Items -***
Agent ID - [NICE IEX WFM valid range = 1 to 40 ASCII characters].
[VENDOR system valid range =   1 to 20 alpha-numeric characters

This is equivalent to the VENDOR system Agent Logon ID value.

The following characters are not allowed within the Agent ID  (&) (|) (\).
(Mandatory Field - used as a record key)

VENDOR data source: dbo.cc_user.logon_id

Internal Contacts – [NICE IEX WFM valid range = 0 - 65000]. The number of Internal Contacts received by this Agent that were finished during this interval.

VENDOR data source: SUM(Agent Activity->#  of Sessions->Answered)
(Sum of all service calls from all Service Groups for this agent)

Internal Handle Time - [reported as seconds; NICE IEX WFM valid range = 0 - 2147483647]. The Handle Time of Internal Contacts received by this Agent that occurred during this interval.

VENDOR data source: SUM(Agent Activity->Session State Duration->Handling)
(Sum of handling time for all service calls from all Service Groups for this agent)

Ready Time –

VENDOR data source: This data item reported in the Agent-Queue report.

Not Ready Time –

VENDOR data source: This data item reported in the Agent-Queue report.

Outbound Contacts - [NICE IEX WFM valid range = 0 - 65000]. The number of outbound contacts began by this Agent during this interval.   Note that this value does not pertain to Outbound Dialer type contacts.

VENDOR data source: Agent Activity->Outgoing->Calls

Outbound Handle Time – [reported as seconds; NICE IEX WFM valid range = 0 - 2147483647]. The Handle Time of Outbound Contacts received by this Agent that occurred during this interval.  Note that this value does not pertain to Outbound Dialer type contacts.

VENDOR data source: Agent Activity->Outgoing->Duration

DN Contacts - [NICE IEX WFM valid range = 0 - 65000]. The number of Direct Number (DN) contacts began by this Agent during this interval.  DN Calls are inbound calls placed directly to the agent's extension; therefore they are not routed through a Contact Router *Queue*.

VENDOR data source: Agent Activity->Incoming Non Service->Calls

DN Contact Time – [reported as seconds; NICE IEX WFM valid range = 0 - 2147483647]. The Handle Time of Outbound Contacts received by this Agent that occurred during this interval. DN Calls are inbound calls placed directly to the agent's extension; therefore they are not routed through a Contact Router *Queue*.

VENDOR data source: Agent Activity->Incoming Non Service->Duration

Login Time – [reported as seconds; NICE IEX WFM valid range = 0 - 2147483647]. The total time the Agent was logged in during this interval. This value should not exceed the interval length for a particular interval.

VENDOR data source: Agent Activity->Duration->Logged In

***Trailer -*** This is a unique identifier that indicates the end of the Agent System data
(example:  *END AGENT SYSTEM PERFORMANCE REPORT*)

## 11.4  Agent Profile Report – (Agent Daily Activity)

This report has been omitted from this Historical interface report set.  The Real-Time Adherence
interface will be the source for these statistics.

# Section 12 – Custom NICE IEX WFM Interface Calculations

This section contains any custom calculation or interface behavior by the NICE IEX WFM portion of the interface described within this document.   This information is specific to IEX Development and is not intended for Vendor development.

## 12.1   ActiveContacts

The NICE IEX WFM interface application must derive *ActiveContacts* during the processing of the vendor interval data.  *ActiveContacts* must be output to the AgentQueueStats and the QueueStats tables within NICE IEX WFM.

**Deriving ActiveContacts**

No flag or indicator will be used to signify the collection of *ActiveContacts.* The NICE IEX WFM interface application will always utilize logic to derive *ActiveContacts* using the following procedure:

The NICE IEX WFM interface application reports this value from the contact router Agent-Queue interface report.  If an agent has talk time for a particular queue within a particular interval, yet has no handled contact pegged to that same queue and interval, then the application pegs an *ActiveContact* for this Agent, on this queue, for this interval.

> **Note**:  The pegging of an ActiveContact for an agent on a queue means that the agent answered a contact in a previous interval and the handle time spanned into this reporting interval. For voice contacts, IEX can assume that it is impossible for an agent to have more than 1 ActiveContact for a particular interval. For other media types of which agents are allowed to handle more than one contact simultaneously, it is possible for an agent to have more than 1 ActiveContact pegged for a particular queue in a particular interval.

**Agent Statistics**:

The NICE IEX WFM interface application collects HandledContact counts and stores them within the Agent-Queue statistics without manipulation.  The NICE IEX WFM interface application should never add ActiveContacts with HandledContacts within any of the Agent statistics tables.

**Queue Statistics**:

The NICE IEX WFM Queue statistics table stores HandledContacts and ActiveContacts separately.  The NICE IEX WFM interface application derives Queue level ActiveContacts by "summing-up" statistics from the Agent-Queue statistics.  The NICE IEX WFM interface application should never add ActiveContacts with HandledContacts within any of the historical tables.

## 12.2   ShortHandled and LongHandled

**Immediate Response and Deferrable Response Type Queues**

The NICE IEX WFM interface application must satisfy the database requirements of supplying *ShortHandled* (Handled Before Grade of Service) and *LongHandled* (Handled After Grade of Service).

Since the Vendor system only supplies ShortHandled (Handled Before Grade of Service) then the interface must calculate (derive) LongHandled as follows:

LongHanded = Handled - ShortHandled

**Outbound Dialer Type Queues**

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For Outbound Dialer type queues the following mapping should be performed:

HandledAfterSL = Handled

HandledBeforeSL = 0

## 12.3   AbandonedShort and AbandonedLong

**Immediate Response and Deferrable Response Type Queues**

The NICE IEX WFM interface application must satisfy the database requirements of supplying *ShortAbandoned* (Abandoned Before Grade of Service) and *LongAbandoned* (Abandoned After Grade of Service).

In some situations ShortAbandoned + LongAbandoned would always equal Abandoned. However, some systems may use different Service Level targets (times) to determine each. Therefore, it is always best for the Vendor system to provide all three elements (Abandoned, ShortAbandoned, and LongAbandoned).

However, for this deployment the vendor system only supplies Abandoned and does not supply ShortAbandoned or LongAbandoned.  Thus, the NICE WFM interface application must calculate perform the following:

ShortAbandoned = 0

LongAbandoned = Abandoned

**Outbound Dialer Type Queues**

Since Abandoned is not applicable to Outbound Dialer activities, the following mapping should be performed:

ShortAbandoned = 0

LongAbandoned = 0

# Section 13 – Interface Limitations and Considerations

1. In the event that interval statistics are missing in NICE IEX WFM, it is understood that CUSTOMER has a tool provided to them by the VENDOR to request/compile/deliver such statistics to the NICE IEX WFM server, (refer to *Method of Re-Sending Data* section of this document*).* Within such a situation, if CUSTOMER can't produce missing intervals from the VENDOR system, they should contact VENDOR Technical Support for resolution.

2. NICE IEX WFM Technical Support is not responsible for the integrity of any VENDOR data presented to NICE IEX WFM within the VENDOR interface reports.  IEX is only able to guarantee that the data it receives from the VENDOR system is processed and stored correctly within the NICE IEX WFM system.

3. It is CUSTOMER's responsibility to establish and maintain a technical support contract directly with VENDOR for support issues related to VENDOR data collection and delivery to the NICE IEX WFM system.

4. The 24-hour interval Agent Profile Report is not being used within this Historical Data Interface design. IEX WFM will derive the statistics required to enable the Historical Adherence feature from the Solidus Real-Time Adherence (RTA) interface.

5. The Backlog, BacklogExpired, and BacklogNotExpired data elements are not supported by the vendor system therefore will not be available within IEX WFM.

6. The ShortAbandoned and LongAbandoned data items are not supported by the vendor therefore will not be available within IEX WFM.  Note that ShortAbandoned is also used to derive the *Abandoned Service Level* data metric within IEX WFM.

7. AHT (Average Handle Time):
   The Handled Time (Talk Time) is derived by Solidus as the *start* of the event until the *end* of the event.  Solidus does not recognize the focus time of desktop windows to determine when agents are active on specific contacts when they are multitasking (handling more than one contact simultaneously).  Thus Handle Time (and therefore AHT (Average Handle Time)) will represent the total handle time for contacts, even when certain contacts are happening simultaneously for an agent due to multitasking.  This may occur if agents handle more than one chat at a time, or as an example when agents are handling either a chat or email while taking a voice call.

8. ReadyTime and IEX Actual Occupancy and IEX Estimated Staff:
   Mitel Solidus agents have the ability to control their Ready state by media type.  For example, an agent may be on a voice call, but may show READY on other media channels such as Chat or Email.  Furthermore, when an agent is in a READY state for a media type, this amount of READY time is reported on each queue associated with that media type within the Solidus reporting system. To avoid this type of reporting of Ready time to IEX WFM the Solidus development team will perform a distribution function to the ReadyTime values prior to transmitting these data elements to IEX.  *See Appendix B for details regarding the Solidus Distribution Function.*
   - The Distributed Ready Time may be used to derive CT Estimated Staff

- The Distributed Ready Time is used to derive CT Actual Occupancy

9. <u>NotReadyTime</u>:
   Mitel Solidus agents have the ability to control their NotReady state by media type. Furthermore, when an agent is in a NOTREADY state for a media type, this amount of NOTREADY time is reported on each queue associated with that media type within the Solidus reporting system. To avoid this type of reporting of NotReady time to IEX WFM the Solidus development team will perform a distribution function to the NotReadyTime values prior to transmitting these data elements to IEX. *See Appendix B for details regarding the Solidus Distribution Function.*

10. The NICE IEX WFM interface will distribute data elements from the Agent System Performance Report to the Queue statistics before posting such data to the NICE IEX WFM historical database tables. (See Appendix A of this document).  Therefore, this data should only be referenced as Agent daily totals within NICE IEX WFM.  Elements derived from the Agent System Performance Report should not be referenced by Queue within NICE IEX WFM.  The Distribution algorithm will distribute items from the Agent System Performance Report to the Queue statistics based on the amount of Inbound Talk Time and After Call Work time the Agent had on each Queue.  If the Agent had no Talk time or ACW time on a particular Queue during the given interval, then the values will be posted to the Agents primary Queue as defined within NICE IEX WFM.  The Primary Queue assignment is mapped at time of NICE IEX WFM administration database configuration.
    - The Distributed Login Time may be used to derive CT Estimated Staff.
    - Loaded Estimated Staff calculation should not be used within NICE IEX WFM.  This calculation uses a distributed Not Ready time.
    - Loaded AHT calculation is not recommended by IEX since it uses OutTalk within its calculation.

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# Section 14 – Sample VENDOR Reports sent to NICE IEX WFM

## Agent Profile Report – (Agent Daily Activity)

This report has been omitted from this historical interface report set.  The Real Time Adherence interface will be used as the source for these statistics.

## Queue Report

```
Begin Queue Report
08/30/11 14:00
Queue, Received, Handled, Aban, Ans-GOS, HandleTime, HoldTime, WorkTime, Distrib, Q-Delay, SrLvl
Email Group 1, 3, 3, 0, 3, 534, 0, 87, 3, 1831, 100
NoEmail, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0
Voice 1, 5, 5, 0, 5, 126, 0, 48, 5, 16, 100
Voice 2, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0
Voice Manual, 2, 2, 0, 2, 42, 0, 60, 2, 7, 100
End Queue Report
```

## Agent-Queue Report

```
Begin Agent-Queue Report
08/30/11 14:00
Queue, Agent ID, Handled, HandleTime, HoldTime, WorkTime, ReadyTime, NotReadyTime
Email Group 1, pam, 1, 475, 0, 29, 0, 620
Voice 1, pam, 3, 93, 0, 30, 416, 47
Voice Manual, pam, 1, 48, 0, 30, 263, 29
Voice Manual, Bo_1234, 1, 54, 0, 30, 318, 36
Voice 1, Bo_1234, 2, 82, 28, 20, 386, 43
Email Group 1, Bo_1234, 2, 360, 0, 58, 0, 622
End Agent-Queue Report
```

## Agent System Performance Report

```
Begin Agent System Performance Report
08/30/11 14:00
AgentID, InternalContacts, InternalTime, OutContacts, OutTime, DNContacts, DNTime, LoginTime
pam, 5, 616, 1, 27, 1, 41, 900
Bo_1234, 5, 495, 2, 39, 1, 21, 900
End Agent System Performance Report
```

## Signoff Authorization

The undersigned hereby accept the integration functional design as specified within this document. IEX understands that the undersigned has the authority to accept and approve this integration design on behalf of *<Customer Company Name>* and *Mitel*.

### *<Customer Company Name>* Authorization

Authorization Signature:_____

Print Name:_____

Print Title:_____

Date:_____

Authorization Signature:_____

Print Name:_____

Print Title:_____

Date:_____

### *Mitel* Authorization

Authorization Signature:_____

Print Name:_____

Print Title:_____

Date:_____

Authorization Signature:_____

Print Name:_____

Print Title:_____

Date:_____

### *IEX* Authorization

Authorization Signature:_____

Print Name:_____

Print Title:_____

Date:_____

Authorization Signature:_____

Print Name:_____

Print Title:_____

Date:_____

# Appendix A

**NICE IEX WFM Distribution Algorithm for Agent Performance Report Data**
The NICE IEX WFM data collection requirements specify that some Agent data must be stored in the NICE IEX WFM historical database tables referenced by Queue. This enables proper Contact Type statistical data population within NICE IEX WFM, thereby enabling accurate Forecasts and Schedules.  However, certain Vendor Agent statistics cannot be reported by Queue. These items make up the Agent System Performance interface report from the Vendor system. The NICE IEX WFM interface application performs special algorithms that distribute these data items across Queues for each Agent.  The NICE IEX WFM interface application distributes **all** values from the Agent System Performance report to Queue statistics by measuring the *Productive Time* each agent encountered on each Queue.

*Productive Time* is generally the amount of Talk + Work time for a particular agent on each Queue.  The *Total Productive Time* is the sum of a particular agent's Talk + Work time across all Queues.

**Distribution Example**:
For simplicity, the example below shows an example of distributing one element from the Agent System Performance Report; Login Time.  However, all values from the Agent System Performance Report are distributed using this algorithm.

In the example below, Agent ID 140 processed contacts on two separate Queues, 10 and 20, during the reporting interval.
Agent 140 has 1800 seconds of Login Time that needs to be distributed across Queues 10 and 20.

| Queue | Agent ID | Talk Time | Work Time | …………... | | Login Time |
|-------|----------|-----------|-----------|---------|--|------------|
| 10 | 140 | 300 | 100 | | | 0 |
| 20 | 140 | 500 | 200 | | | 0 |
| -7 | 140 | 0 | 0 | | | 1800 |

The row with a Queue ID of -7 indicates a record from the Vendor system's Agent System Performance interface report.

**Total Productive Time = Total of all Talk + Work time for this Agent across all Queues**
Total Productive Time in this example is 1100.

**Queue's Percentage of ProductiveTime = (Queue's TalkTime + WorkTime / Total ProductiveTime)**
Queue 10: (400 / 1100) = .3636
Queue 20: (700 / 1100) = .6363

**Distributed Data Item = (Source Field * Queue's Percentage of ProductiveTime) +.5 and truncate**

Distributed Data for *LoginTime*
Queue 10: (1800 * .3636) + .5 = 654.9 = 654
Queue 20: (1800 * .6363) +.5 = 1145.8  = 1145

Data Storage showing newly distributed Ready and Login values

| Queue | Agent ID | Talk Time | Work Time | ………….. | | Login Time |
|---|---|---|---|---|---|---|
| 10 | 140 | 300 | 100 | | | 655 |
| 20 | 140 | 500 | 200 | | | 1145 |
| -7 | 140 | 0 | 0 | | | 1800 |

Please see *Interface Limitations and Considerations* section of this document for more details pertaining to the distributed data elements within this integration.

# Appendix B

**Solidus Distribution Algorithm for Ready and NotReady Times**

Mitel Solidus agents have the ability to control their Ready state by media type.  For example, an agent may be on a voice call, but may show READY on other media channels such as Chat or Email.  Furthermore, when an agent is in a READY state for a media type, this amount of READY time is reported on each queue associated with that media type within the Solidus reporting system.  For example, if an agent may receive Voice Calls from three queues and is in the READY state for media type VOICE for 300 seconds, then within the Solidus system 300 seconds of READY time is recorded for each of the queues (Solidus Service Groups). This same concept holds true for the NotReady time metric within Solidus.  This style of reporting into IEX WFM would cause an overstated READY time value thus impacting CT level *Actual Occupancy* as well as CT level *Estimated Staff*.  Therefore, the development team will perform a distribution function to the ReadyTime and NotReadyTime values prior to transmitting these data elements to IEX.  The distribution function will perform as follows:

**Distribution Example**:

In the example below, Agent ID 140 processed contacts on two separate *Voice* Service Groups, two separate *Email* Service Groups and 2 separate *Chat* Service Groups during the reporting interval.  A Solidus *Service Group* is equivalent to an IEX WFM *Queue*.

As shown below, agent 140 has 500 seconds of Ready time and 300 seconds of NotReady time within the *Voice* media type, 300 seconds of Ready time and 100 seconds of NotReady time within the *Email* media type, and 200 seconds of Ready time and 30 seconds of NotReady time within the *Chat* media type.  After the distribution function is applied to the three Ready and three NotReady times across the queues within each media type group of queues, the distributed values for Ready and NotReady times as listed in the gray shading.

| Voice Queue | Agent ID | Talk Time | Work Time | ………….. | Ready Time | NotReady Time |
|---|---|---|---|---|---|---|
|  | 140 |  |  |  | 500 | 300 |
| V11 | 140 | 300 | 100 |  | 182 | 109 |
| V22 | 140 | 500 | 200 |  | 318 | 191 |

| Email Queue | Agent ID | Talk Time | Work Time | ………….. | Ready Time | NotReady Time |
|---|---|---|---|---|---|---|
|  | 140 |  |  |  | 300 | 100 |
| E444 | 140 | 200 | 60 |  | 195 | 65 |
| E555 | 140 | 100 | 40 |  | 105 | 35 |

| Chat Queue | Agent ID | Talk Time | Work Time | ………….. | Ready Time | NotReady Time |
|---|---|---|---|---|---|---|
|  | 140 |  |  |  | 200 | 30 |
| C6666 | 140 | 100 | 20 |  | 133 | 20 |
| C7777 | 140 | 50 | 10 |  | 67 | 10 |

**Deriving agent's Productive Time within each media type (Voice, Email, and Chat)**

Total Productive Time = Total of all Talk + Work time for this Agent across all queues within each media type

  Voice queues:   300 + 500 + 100 + 200 = 1100
  Email queues:   200 + 60 + 100 + 40 = 400
  Chat queues:    100 + 20 + 50 + 10 = 180

**Deriving agent's *Percentage of Productive Time* across each queue within each media type**

<u>Queue's Percentage of ProductiveTime = (Queue's TalkTime + WorkTime / Total ProductiveTime for this media type)</u>

  Voice queue V11: (400 / 1100) = .3636
  Voice queue V22: (700 / 1100) = .6363
  Email queue E444: (260 / 400) = .65
  Email queue E555: (140 / 400) = .35
  Chat queue C6666: (120 / 180) = .6667
  Chat queue C7777: (60 / 180) = .3334


**Deriving agent's distributed Ready and NotReady times for each queue within each of the three media type groups**

<u>Distributed Data Item = (Source Field * Queue's Percentage of ProductiveTime) +.5 and truncate</u>

  Voice queue V11:    READY: (500 * .3636) + .5 = 182.3 = 182    NOTREADY: (300 * .3636) + .5 = 109.58 = 109
  Voice queue V22:    READY: (500 * .6363) +.5 = 318.6 = 318    NOTREADY: (300 * .6363) +.5 = 191.39 = 191
  Email queue E444:  READY: (300 * .65) +.5 = 195.5 = 195    NOTREADY:  (100 * .65) +.5 = 65.5 = 65
  Email queue E555:  READY: (300 * .35) +.5 = 105.5 = 105    NOTREADY:  (100 * .35) +.5 = 35.5 = 35
  Chat queue C6666:  READY: (200 * .6667) +.5 = 133.8 = 133    NOTREADY:  (30 * .6667) +.5 = 20.5 = 20
  Chat queue C7777:  READY: (200 * .3334) +.5 = 67.18 = 67    NOTREADY:  (30 * .3334) +.5 = 10.5 = 10