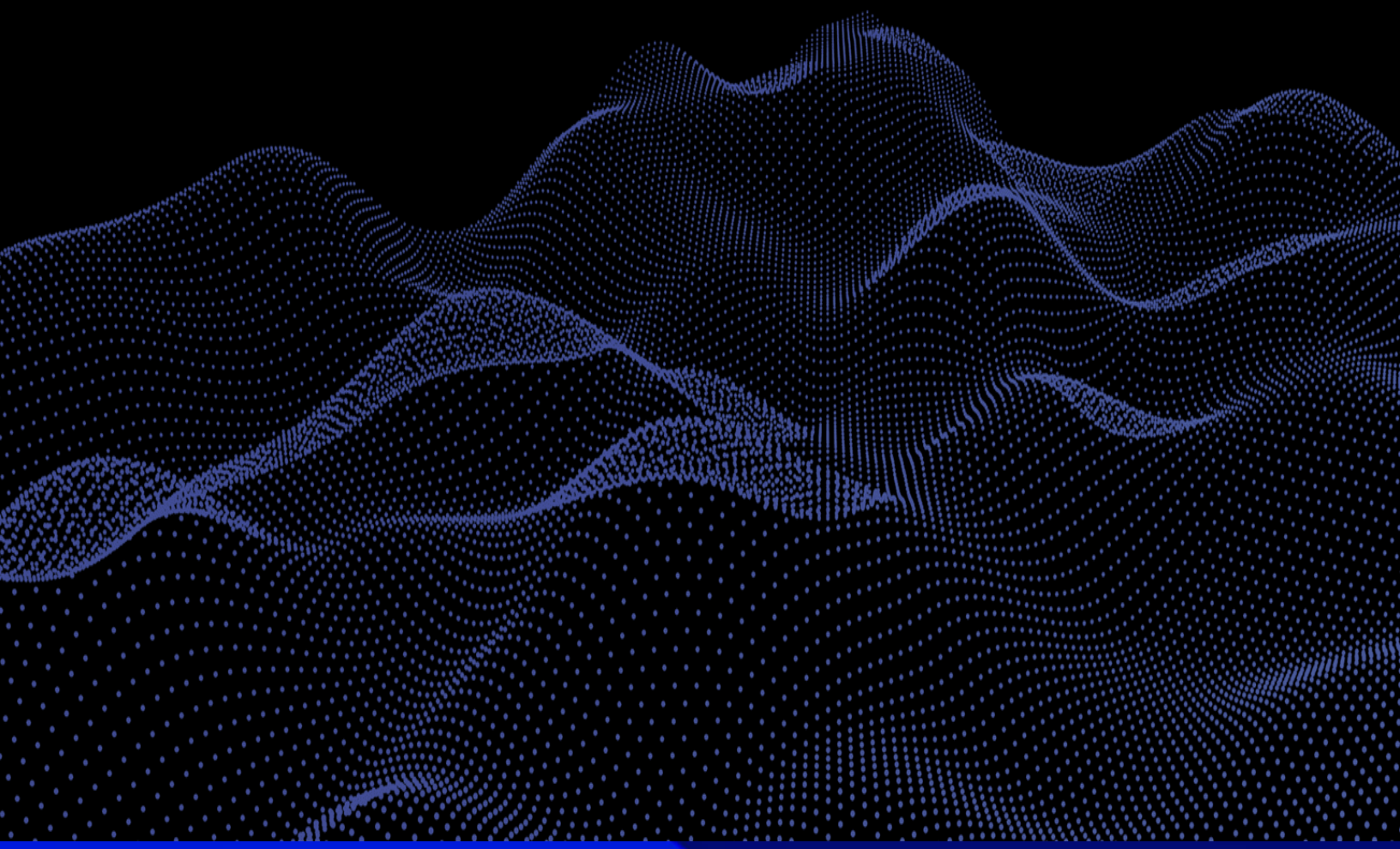
# BSD – DCCP Monitoring Dashboard

*User documentation*



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# 1. Introduction

In response to the operational requirements of SLB's global contact center desks, we have developed a comprehensive Power BI report integrated with the Microsoft Digital Contact Center Platform (DCCP). This report aims to provide real-time insights into key metrics such as conversations in queue, service factors, abandonment rates, agent statuses, and overall call performance. By consolidating these essential metrics into a unified interface, team leads, coordinators, and analysts can quickly identify areas for improvement and make informed decisions to enhance the quality of customer service.

## 2. Abstract

This project addresses the operational needs of SLB's global contact center desks through the development of a comprehensive Power BI report integrated with the Microsoft Digital Contact Center Platform (DCCP). The report focuses on delivering real-time insights into critical metrics including queued conversations, service factors, abandonment rates, agent statuses, and overall call performance. By centralizing these key metrics within a unified interface, team leads, coordinators, and analysts can swiftly pinpoint areas for enhancement and make well-informed decisions aimed at improving customer service quality.

# 3. Objectives

## 3.1. General

Enhance operational efficiency and improve customer service quality at SLB's global contact center desks through the implementation of a comprehensive Power BI report integrated with the Microsoft Digital Contact Center Platform (DCCP).

## 3.2. Specifics

- Provide real-time insights into conversations in queue, service factors, abandonment rates, agent statuses, and overall call performance to enable immediate operational adjustments and improvements.

- Analyze historical and current data to identify trends, patterns, and areas of inefficiency within the contact center operations, facilitating initiative-taking decision-making by team leads and coordinators.

- Optimize agent allocation and workload management based on real-time metrics, ensuring efficient handling of incoming inquiries, and minimizing wait times for customers.

## 4. Dynamics Customer Service Data Base

In the realm of digital contact centers, supervisors must respond swiftly to operational events by dynamically optimizing agent allocation to ensure rapid customer support and enhance satisfaction. These events encompass spikes in incoming interactions, extended call durations, and agent absenteeism. Real-time reporting plays a pivotal role by offering visibility into overall support performance, enabling supervisors to monitor critical metrics on-the-fly, make timely adjustments, and uphold service excellence.

The real-time analytics reports provide insights into organizational health and key performance indicators (KPIs), reflecting the current state of the contact center where supervisors oversee agents managing customer interactions across multiple channels. Users can customize the visual presentation of these reports and save personalized views for quick access.

Supervisors leverage real-time analytics reports to:

- Monitor crucial operational metrics instantly and make timely adjustments to maintain high service levels.
- Assess agent allocation in real-time and optimize resources to deliver exceptional support and enhance customer satisfaction.
- Enhance agent deployment and efficiency by reviewing individual skills and workload profiles, enabling the reassignment or transfer of ongoing conversations via queue or agent filters.
- Track ongoing conversations, monitor customer sentiment, and intervene, as necessary.
- Drill down into specific channels, queues, or agent performances in real-time to gain actionable operational insights and promptly execute necessary actions.

Considering the above, the omnichannel real-time analysis panel allows operation coordinators to view real-time data of the customer service center. It is important to note that these visualizations are only accessible according to organizational levels; only team leaders and coordinators can view them. In the default view of the applications, select Omnichannel Real-Time Analysis under Service. By default, the Summary report is displayed. To view the Ongoing Conversations, Agents, and Voice reports, select the corresponding tabs.

To access the workspace where the Customer Service Workspace databases are located, use the following link: DCCP Prod Workspace GSD.

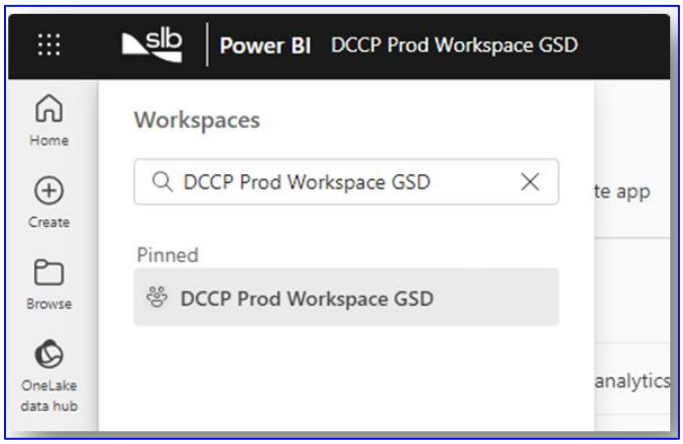


Figure 1 - GSD Workspace

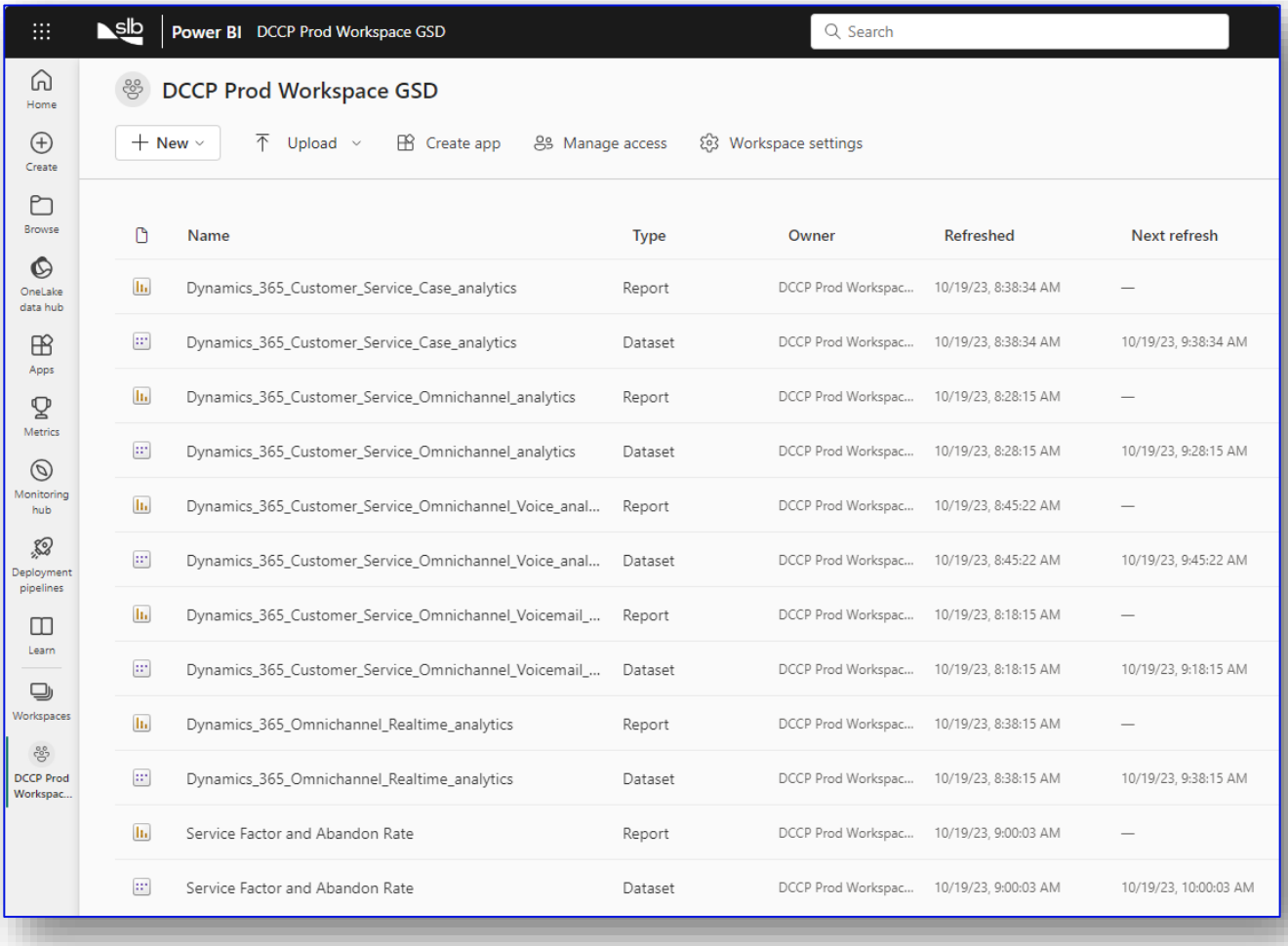


Figure 2 - Dynamics 365 Omnichannel Realtime Analytics

The Data Model is composed of different tables, such a

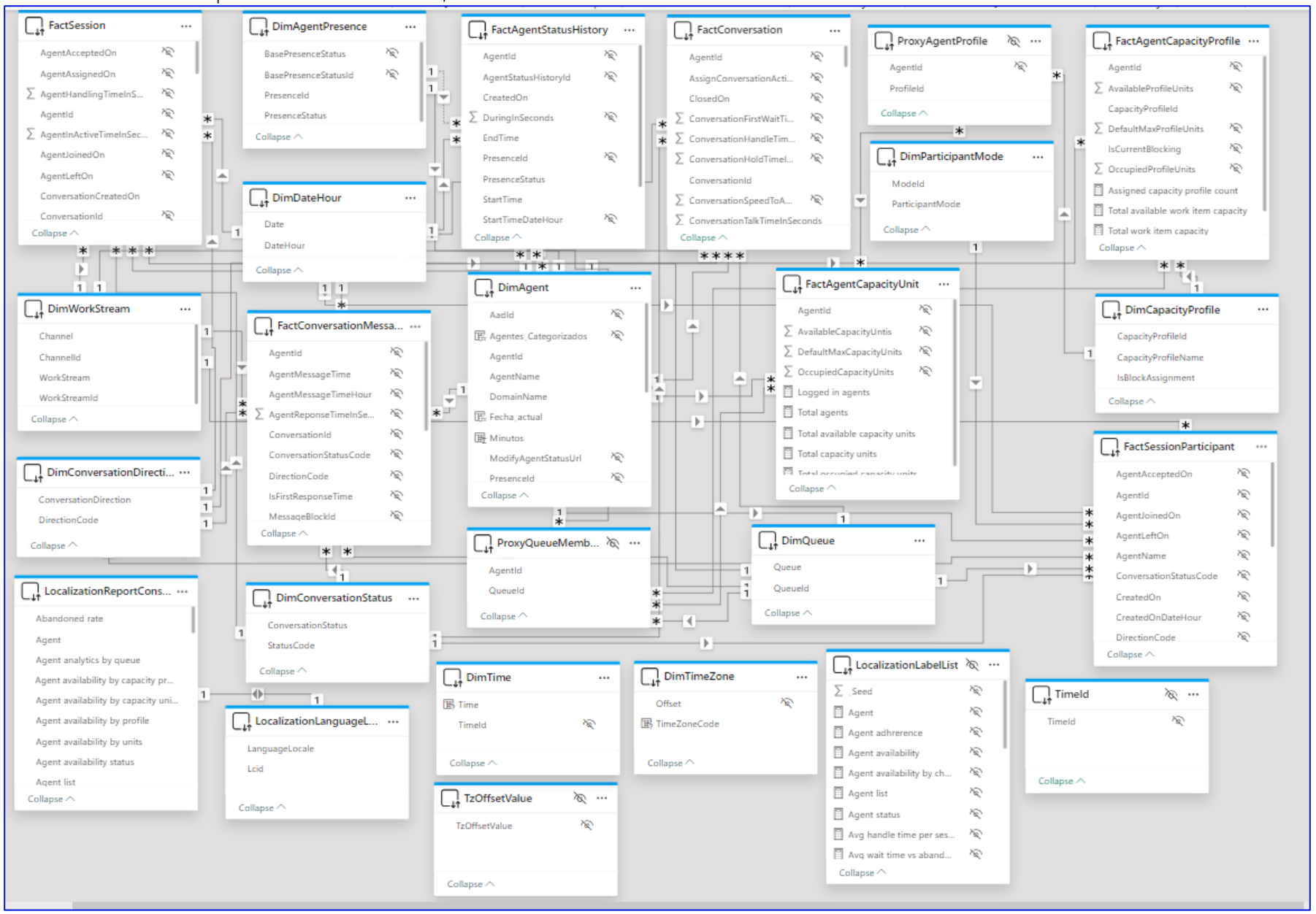


Figure 3 - Data Tables

## 4.1. Data Dictionary

| Entities | Attributes | Description |
|---|---|---|
| DimAgentPresence | Agent presence id | Primary key. |
| DimAgentPresence | Presence status | Agent presence status that could be "Available", "Busy", "Do not Disturb", "Away", "Email", "PNB", "Lunch", "Training", "Start of Shift", "End of Shift", "Lunch", "Remote Control", or "Offline" |
| DimConversationProperty | Conversation property id | Primary key |
| DimConversationProperty | Channel name. | The name of the channel that the conversation came through. |
| DimConversationProperty | Conversation status | The status of the conversation, that is, open, active, waiting, wrap up, and closed. |
| DimDate | Date time | Date time. The type is Date/Time. |
| DimDate | Day | Day name. Example: "Fri". |
| DimDate | Hour | Hour. Example: "01:00", "01:30" |
| DimDate | Month | Month name. Example: "Apr 2021". |
| DimDate | Quarter | Quarter name. Example: "Q1". |
| DimDate | Week | Week number. Example: "1". |
| DimDate | Year | Year number. Example: "2021" |
| DimQueue | Queue id | Queue id. Primary key. Type: Guid. |
| DimQueue | Is omnichannel queue | Currently, it's always true. |
| DimQueue | Queue | Queue name. |
| DimSystemUser | System user id | System user ID. |
| DimSystemUser | Agent | Name of the agent. |
| DimSystemUser | Is bot | Is bot. True or false. |
| DimTimeZone | Time zone | Time zone code. Example: GMT +01:00. |
| DimTopic | Topic id | Topic ID. Primary key. Type: Guid. |
| DimTopic | Topic | Topic name. |
| FactAgentStatusHistory | Agent status history id | Identifier of the agent status history record. Primary key of type GUID. |
| FactAgentStatusHistory | System user id | Agent ID. Foreign key to DimSystemUser. |
| FactAgentStatusHistory | Agent presence id | Foreign key to DimAgentPresence. |
| FactAgentStatusHistory | Agent available duration (hrs) | The time an agent is in the Available state in the omnichannel application. |
| FactAgentStatusHistory | Agent away duration (hrs) | The time an agent is in the Away state in the omnichannel application. |
| FactAgentStatusHistory | Agent busy (DND) duration (hrs) | The time an agent is in the Busy DND state in the omnichannel application. |
| FactAgentStatusHistory | Agent busy duration (hrs) | Time an agent in the busy state in omnichannel application. |
| FactAgentStatusHistory | Agent offline duration (hrs) | The time an agent signed out of the omnichannel application. |
| FactAgentStatusHistory | Agent total sign-in time (hrs) | The time an agent in each status. The column is used to calculate other measure. |

| | | |
|---|---|---|
| FactConversation | Conversation id | Identifier of the conversation record. Primary key of type GUID. |
| FactConversation | Conversation title | Conversation title. |
| FactConversation | Conversation Url | Conversation URL. |
| FactConversation | Conversation property id | Foreign key to DimConversationProperty. |
| | | |
| FactConversation | Owner system user id | Owner system user ID. Foreign key to DimSystemUser. |
| FactConversation | Queue id | Queue ID. Foreign key to DimQueue. |
| FactConversation | Topic id | Topic ID. Foreign key to DimTopic. |
| FactConversation | Is offered | It means whether the conversation is initiated by the customer. Bot escalates to an agent or an agent handling customer call directly |
| FactConversation | Is conversation date in past | Is conversation date in past. |
| FactConversation | Is outbound | Is outbound conversation. |
| FactConversation | Abandon rate | Abandon rate. |
| FactConversation | Avg. conversation hold time (min) | The total time an agent has put a customer on hold. |
| FactConversation | Avg. conversation sentiment | Avg. conversation sentiment. |
| FactConversation | Avg. conversation talk time (min) | The total time spent by the customer and agent talking on the voice call. It's the difference between the handle time and cumulative time in hold and after call work time. |
| FactConversation | Avg. conversation time (min) | Avg. conversation time (min). |
| FactConversation | Avg. conversation wrap-up time (min) | Avg. conversation wrap-up time (min). |
| FactConversation | Avg. speed to answer (sec) | The time it took for a customer call to be answered. |
| FactConversation | Conversation volume | Conversation volume that's assigned to a topic. |
| FactConversation | Conversation volume change | Conversation volume change. |
| FactConversation | Owner system user id | Owner system user ID. Foreign key to DimSystemUser. |
| FactConversation | Queue id | Queue ID. Foreign key to DimQueue. |
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| | | |
|---|---|---|
| FactConversation | Avg. conversation sentiment | Avg. conversation sentiment. |
| FactConversation | Avg. conversation talk time (min) | The total time spent by the customer and agent talking on the voice call. It's the difference between the handle time and cumulative time in hold and after call work time. |
| FactConversation | Avg. conversation time (min) | Avg. conversation time (min). |
| FactConversation | Avg. conversation wrap-up time (min) | Avg. conversation wrap-up time (min). |
| FactConversation | Avg. CSAT | Avg. CSAT. |
| FactConversation | Avg. speed to answer (sec) | The time it took for a customer call to be answered. |
| FactConversation | Conversation volume | Conversation volume that's assigned to a topic. |
| FactConversation | Conversation volume change | Conversation volume change. |
| FactSession | Session id | Identifier of the session record. |
| FactSession | Conversation id | Identifier of the conversation record. |
| FactSession | Conversation title | Conversation title. |
| FactSession | Conversation Url | Conversation URL. |
| FactSession | Created on | Date created on. |
| FactSession | Closed on | Date closed on. |
| FactSession | Queue id | Queue ID. Foreign key to DimQueue. |
| FactSession | Topic id | Topic ID. Foreign key to DimTopic. |
| FactSession | primary system user id | Primary system user ID. Foreign key to DimSystemUser. |
| FactSession | Is agent accepted session | Has agent accepted the session or not? |
| FactSession | Is agent session | Is agent session or not. |
| FactSession | Avg. conversation handle time (min) | Avg. conversation handle time (min) |
| FactSession | Avg. conversation hold time (min) | Avg. conversation hold time (min) |
| FactSession | Avg. conversation sentiment | The average sentiment score based on the verbatim provided in customer voice survey. |
| FactSession | Avg. conversation talk time (min) | Avg. conversation talk time (min) |
| FactSession | Avg. CSAT | Avg. CSAT |
| FactSession | Avg. incoming messages | Average incoming messages |
| FactSession | Avg. outgoing messages | Average outgoing messages |
| FactSession | Avg. session active time (min) | Average session active time (min) |
| FactSession | Avg. session handle time (min) | Average session handle time (min) |
| FactSession | Avg. session hold time (min) | Average session holds time (min) |

| | | |
|---|---|---|
| FactSession | Avg. session inactive time (min) | Average session inactive time (min) |
| FactSession | Avg. session sentiment | Average session sentiment |
| FactSession | Avg. session talk time (min) | Average session talks time (min) |
| FactSession | Avg. session time (min) | Average session time (min) |
| FactSession | Avg. Speed to answer (sec) | Average Speed to answer (sec) |
| FactSession | Avg. wait time (min) | The average time in minutes customers waited before connecting to agents. Similar to "speed to answer", but includes time waited on each session within a conversation. |
| FactSession | Avg. wait time (sec) | The average time in seconds customers waited before connecting to agents. Like "speed to answer", but includes time waited on each session within a conversation. |
| FactSession | Engaged conversations | The conversations that the agent was engaged in. Customer-to-agent communication can begin at this point. |
| FactSession | Engaged sessions | Sessions presented to an agent and accepted by an agent |
| FactSession | Incoming conversations | Incoming conversations |
| FactSession | Incoming messages | Incoming messages |
| FactSession | Incoming sessions | Incoming sessions |
| FactSession | Outgoing conversations | Outgoing conversations |
| FactSession | Outgoing messages | Outgoing messages |
| FactSession | Sentiment zone | SentimentZone |
| FactSession | Session rejected/timed out rate | Session rejected or timed out rate |
| FactSession | Sessions rejected | Sessions rejected |
| FactSession | Transfer rate | The number of sessions transferred by an agent |
| FactSessionParticipant | Session participant id | Identifier of the session participant record |
| FactSessionParticipant | Session id | Session ID. Foreign key to FactSession. |
| FactSessionParticipant | Avg. consult time (min) | The time spent on the consult from when the agent joined to when they left in session participant. |
| FactSessionParticipant | Avg. monitor time (min) | The time spent on the monitor from when the agent joined to when they left in session participant. |
| FactSessionParticipant | Consult sessions | The number of sessions accepted by a user in mode = consult. |
| FactSessionParticipant | Monitor sessions | The number of sessions accepted by a user in mode = monitor. |

## 4.2. Workflow

When a customer raises a request through a channel such as voice, messaging, or chat, a conversation is created. A conversation represents an entire end-to-end interaction with a customer. A conversation can also be created when an agent calls a customer. A conversation typically originates in a workstream on a specific channel. It's then routed to a queue, based on your organizational rule settings.

A conversation entity holds metrics about your customer's experience with the contact center. These metrics include the ***status, wait time, handle time, and current customer sentiment***. A conversation can end during a single session, or it can extend to multiple sessions. A session is created when the system identifies an agent to work on a conversation. New sessions are created for different reasons. For example, a conversation might be transferred to a different queue, or an agent might reject a conversation request or let it time out.

From this entity, you can get KPIs and metrics that describe queue performance and agent performance. Examples include the number of requests that landed in a queue, the number of requests that agents rejected, and agent handle time. The workflow in the following diagram represents a single conversation where multiple sessions are created. *The first session is created when the conversation is created and assigned to a bot. When the bot escalates the conversation to a human agent, the second session is created, and the first session is automatically closed. In the second session, the system identifies and assigns the best agent to work on the customer request. If that agent rejects the request, a new session is created, and the process of identifying another agent begins.*

## 4.3. Dashboard Details

The creation of the Dashboard was primarily based on the standard design developed by Dynamics 365 Omnichannel Realtime Analytics. The Omnichannel real-time analytics dashboard consists of the following reports:

### 4.3.1. Summary:

The Omnichannel real-time analytics dashboard in the Customer Service workspace opens with the Summary report as its default view. This report allows users to apply filters based on various criteria such as time, channels, queues, time zone, conversation status, and skills.

The Summary report offers insights into customer interactions over time, segmented by channels or queues. Analyzing statistics related to the channels through which conversations originate aids in optimizing queue management. For instance, a high incidence of abandoned conversations can negatively impact customer satisfaction. Monitoring operational metrics like agent availability and queue distribution in real time can help address such issues promptly.

Moreover, the report enables tracking of customer sentiment to assess the effectiveness of support provided. For example, a prolonged average handle time may indicate inefficiencies

in issue resolution. Depending on the nature of the challenges identified, appropriate training or support can be provided to agents to enhance their ability to resolve customer issues efficiently.

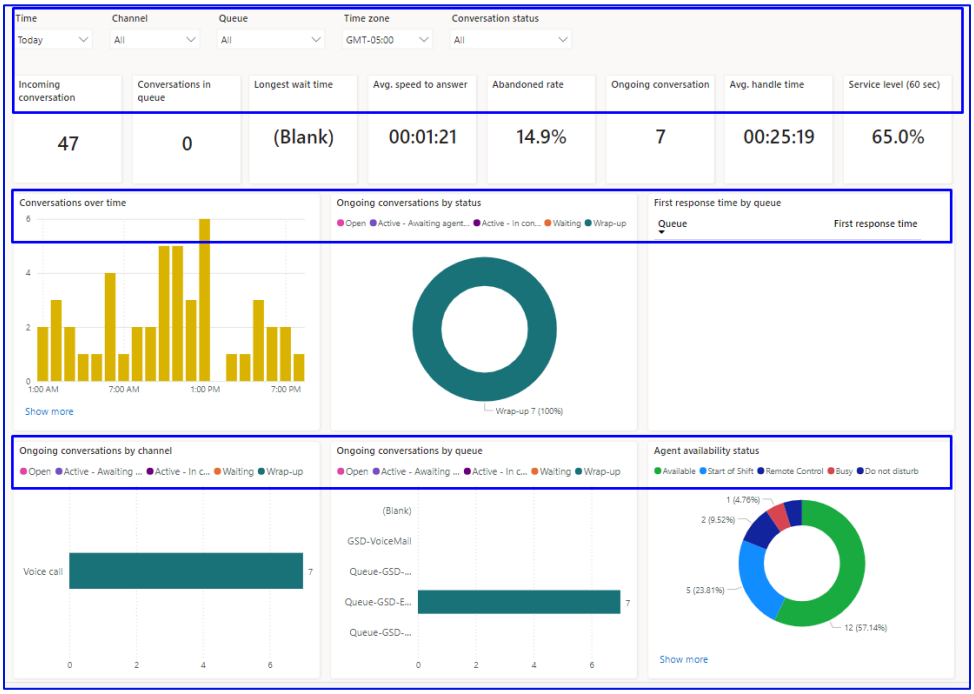


Figure 4 - Dynamics 365 Omnichannel Realtime Analytics – Summary

### 4.3.2. Voice:

The Voice report offers detailed insights into key metrics specifically within the voice channel. Users can refine their analysis by applying filters for time, queue, time zone, conversation status, direction, and skills.

The Voice report delivers a comprehensive overview of voice interactions over time, categorized by queue. It highlights critical metrics from the past 24 hours, such as conversations in the queue, average wait time, and average handle time, which are instrumental in optimizing call flow. Utilizing these metrics can help reduce wait times for conversations and ensure efficient assignment of appropriately skilled agents, thereby enhancing both agent productivity and customer satisfaction.

Additionally, the report enables monitoring of voice-specific operational metrics like conversation direction, indicating whether the conversation originated from the customer or was initiated by a contact center agent. These operational insights play a crucial role in managing queue distribution effectively.

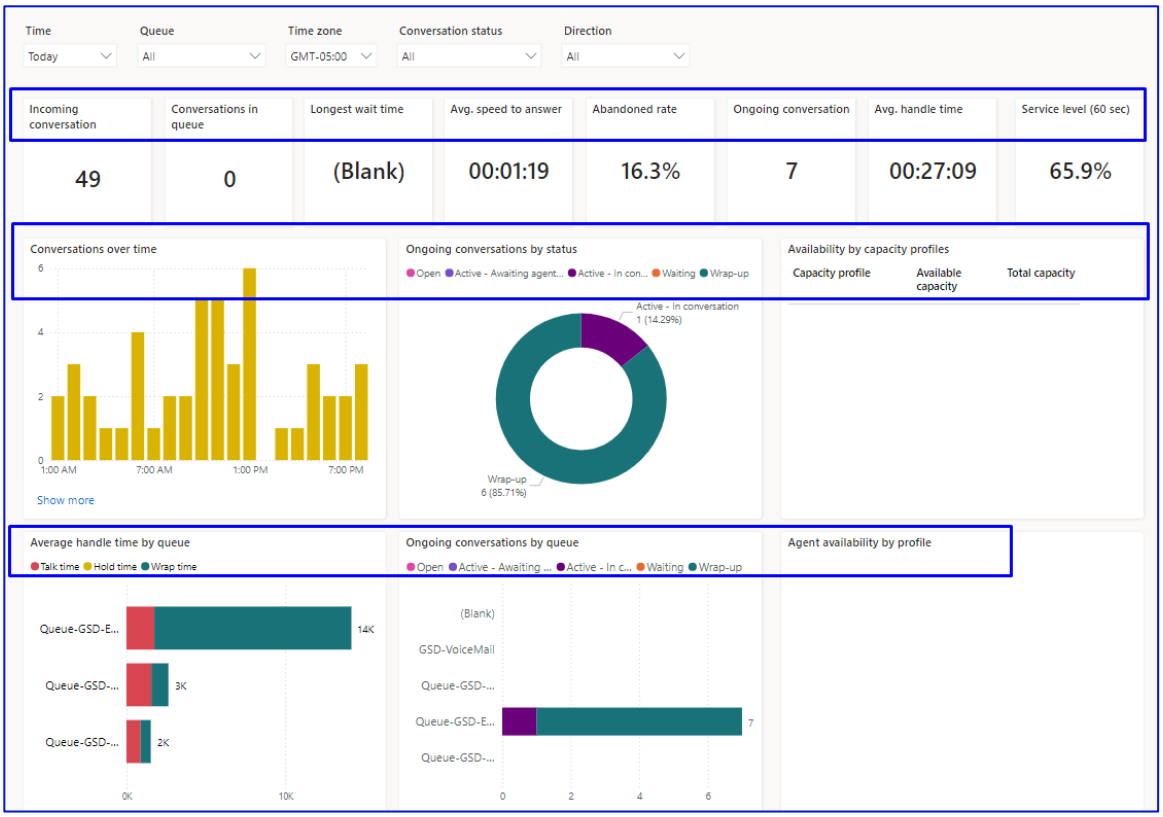


Figure 5 - Dynamics 365 Omnichannel Realtime Analytics – Voice

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### 4.3.3. Ongoing conversation:

The Ongoing conversation report offers insights into the status of conversations being managed by agents within your organization that have not yet concluded. These conversations can be in states like open, active, wrap-up, or waiting.

This report provides a real-time overview of ongoing conversations, presenting details such as subject matter, status updates, active agent information, queue assignment, channel used, wait times, handle times, and customer sentiment analysis

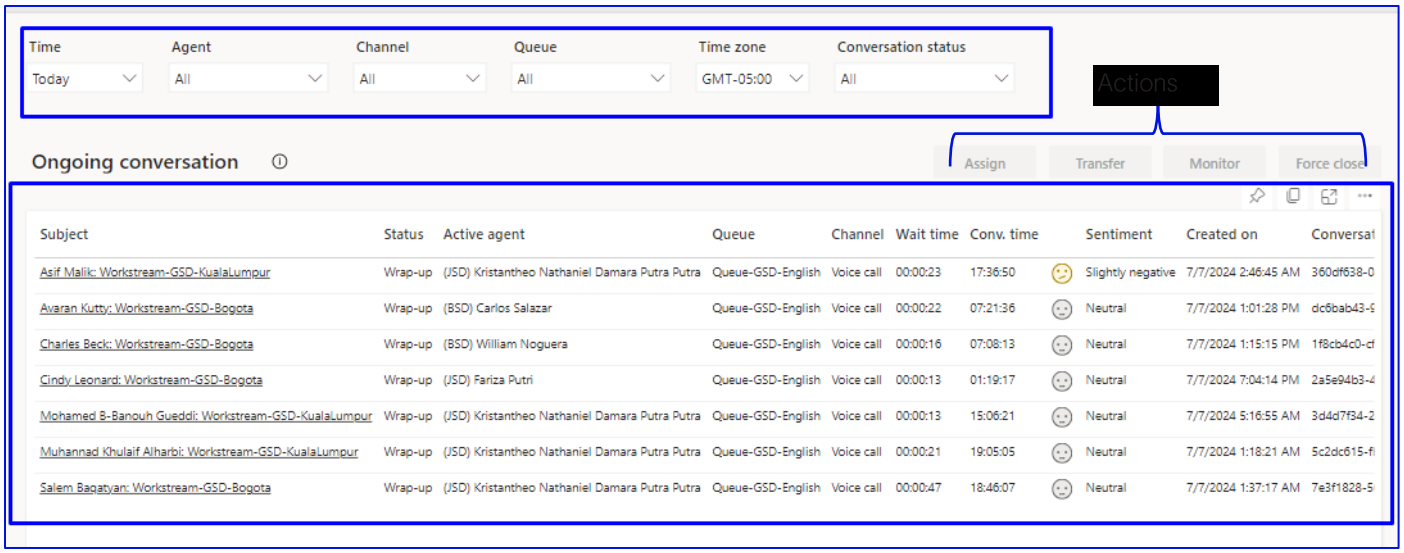


Figure 6 - Dynamics 365 Omnichannel Realtime Analytics – Ongoing Conversation

The conversation list displays all ongoing conversations from the past 24 hours, giving managers a real-time overview of interactions between agents and customers. Within this list, managers can select individual agents and utilize the following buttons to perform various actions on conversations:

- *Assign*: Assign an incoming or unassigned conversation to a specific agent or queue after assessing the agent's skill set and capacity profile.

- *Transfer*: Transfer an ongoing conversation from one agent to another, ensuring compatibility with the receiving agent's skill set and workload.

- *Monitor*: Listen in on an ongoing conversation. Upon selecting "Monitor," a confirmation message indicates that monitoring has commenced. This feature applies to active conversations with agent engagement, those in wrap-up, or waiting states. When monitoring, the selected conversation loads in the browser window while other sessions remain unaffected.

- *Force close*: Promptly close a conversation by terminating the associated work item. When opting to "Force close," a confirmation dialog appears, requiring confirmation to proceed with closing the work item. This action immediately concludes the conversation for the customer as well. It's advised to exercise caution when using this feature.

### 4.3.4. Agents Report

The Agents report offers essential metrics designed to give contact center managers a comprehensive view of agent performance, enabling real-time optimization of agent allocation. This capability is crucial for ensuring customers receive optimal support. This report presents data on agent capacity and status over the past 24 hours. By delving into specific details such as individual agent capacities, managers can swiftly identify and address any staffing gaps, thereby ensuring timely customer support.

Using the Skills filter, managers can categorize agents based on their skill sets. Hovering over an agent's name in the Agent list reveals their proficiency and skill set details. This feature allows managers to match the required skills to resolve specific customer issues with the most suitable agent available.

The report provides flexibility to view agent performance across all channels by selecting the "All" filter. Alternatively, managers can focus on channel-specific performance by selecting a specific channel. Filters such as time, queue, time zone, and conversation status further refine the insights available within the report, facilitating targeted management decisions.

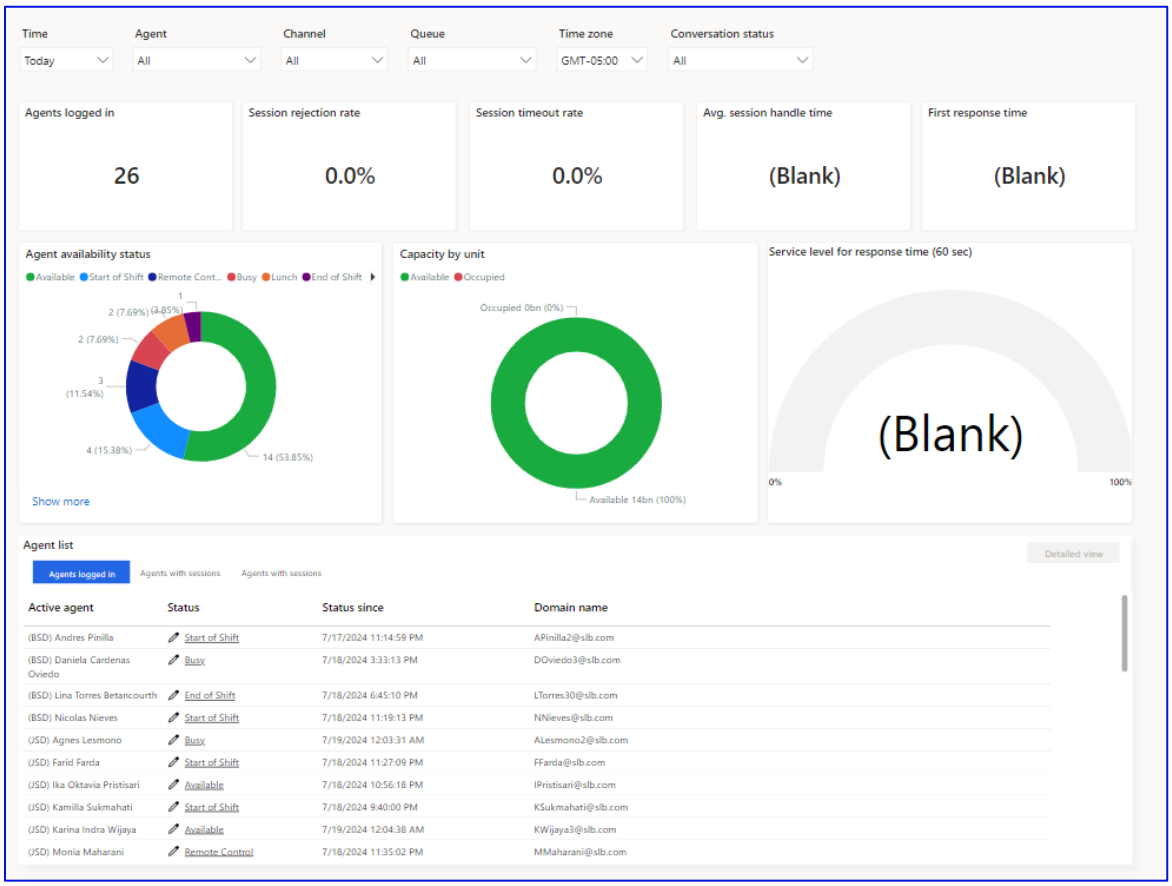


Figure 7 - Dynamics 365 Omnichannel Realtime Analytics – Agents Report

### 4.4. Filter information displayed on Customer Service Workspace.

Use the filters to drill down to KPIs across the dashboard. Adjust the filters based on the insights that you're looking for. The available filters include Time, Agent, Channels, Queue, Time zone, and Conversation status.

For example, the dropdown list for the Time filter includes the following options:

- *Include open conversations*: Show all conversations that started in the last 24 hours, and conversations that started in the last three days and are still open.
- *Last 24 hrs*: Show all conversations that started in the last 24 hours.
- *Today*: Shows all conversations that started on the current date in the selected time zone.

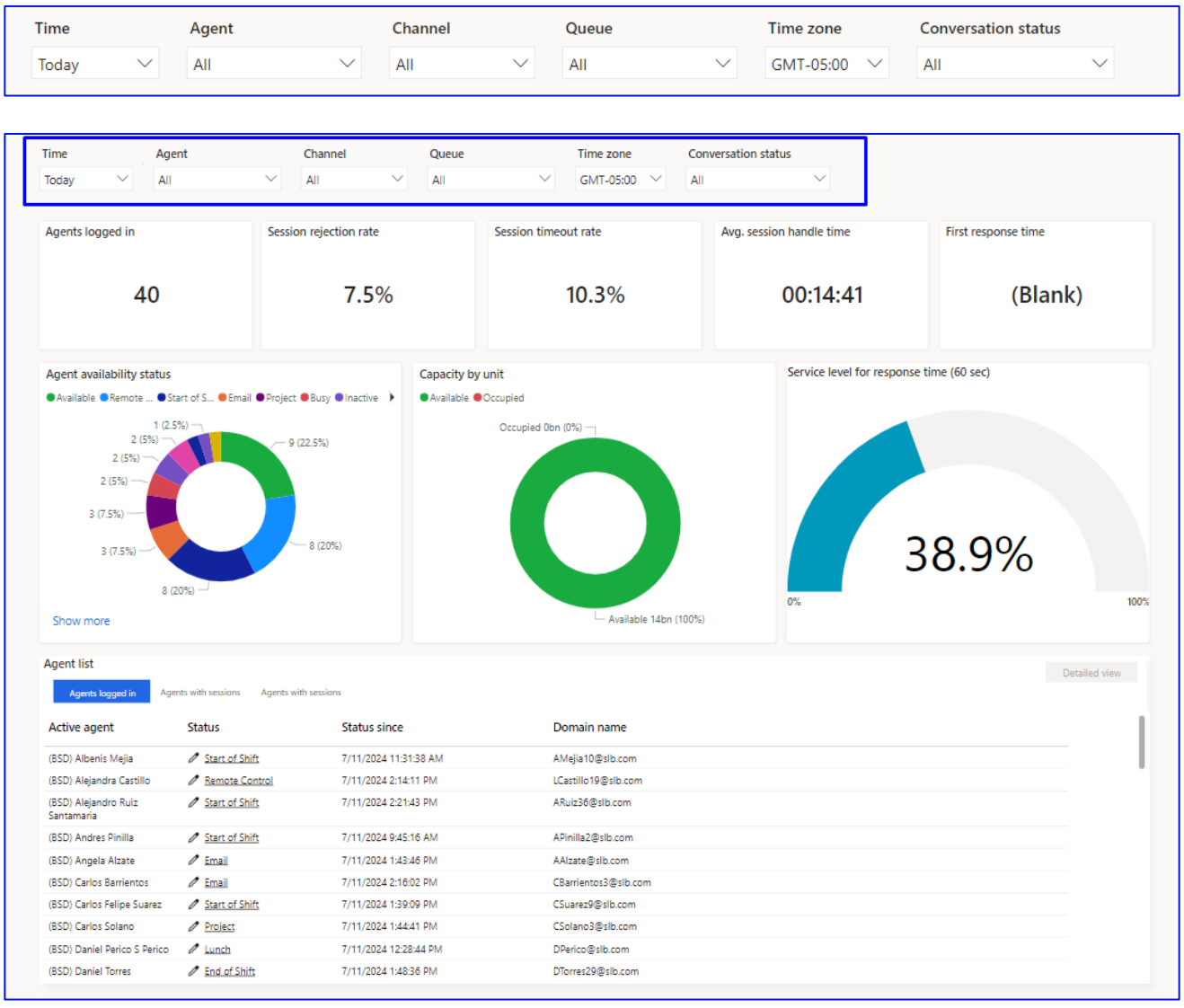


Figure 8 - Dynamics 365 Omnichannel Realtime Analytics - Filters

## 5. DCCP Monitoring Dashboard

However, real-time monitoring of operations becomes cumbersome, as the Team Lead, Coordinator, or Analyst on duty throughout the workday must navigate across multiple pages to assess the performance of the service desk. Therefore, there arose a need to create a workspace that consolidates a wide range of information essential for operational monitoring. The report was developed in Power BI, establishing a direct connection to the semantic model of Dynamics 365 Omnichannel Realtime Analytics. The report was created based on feedback from service desk analysts, coordinators, and team leads regarding the critical data necessary to maintain adequate performance in operations. The report includes the following data:

- Service Factor and Abandon Rate
- Conversations in Queue
- Analyst Status
- Top Ten Call Takers by Analyst and Call Performance
- It is important to emphasize that Time Zone Code, Analyst Status, Time, and Queue Channel can filter the report. In addition of that, am extra feature for Team Leads and Coordinator to change the BSD for the other desk, such as JSD, KLSD & Bucharest to view other active analysts from another time zone.

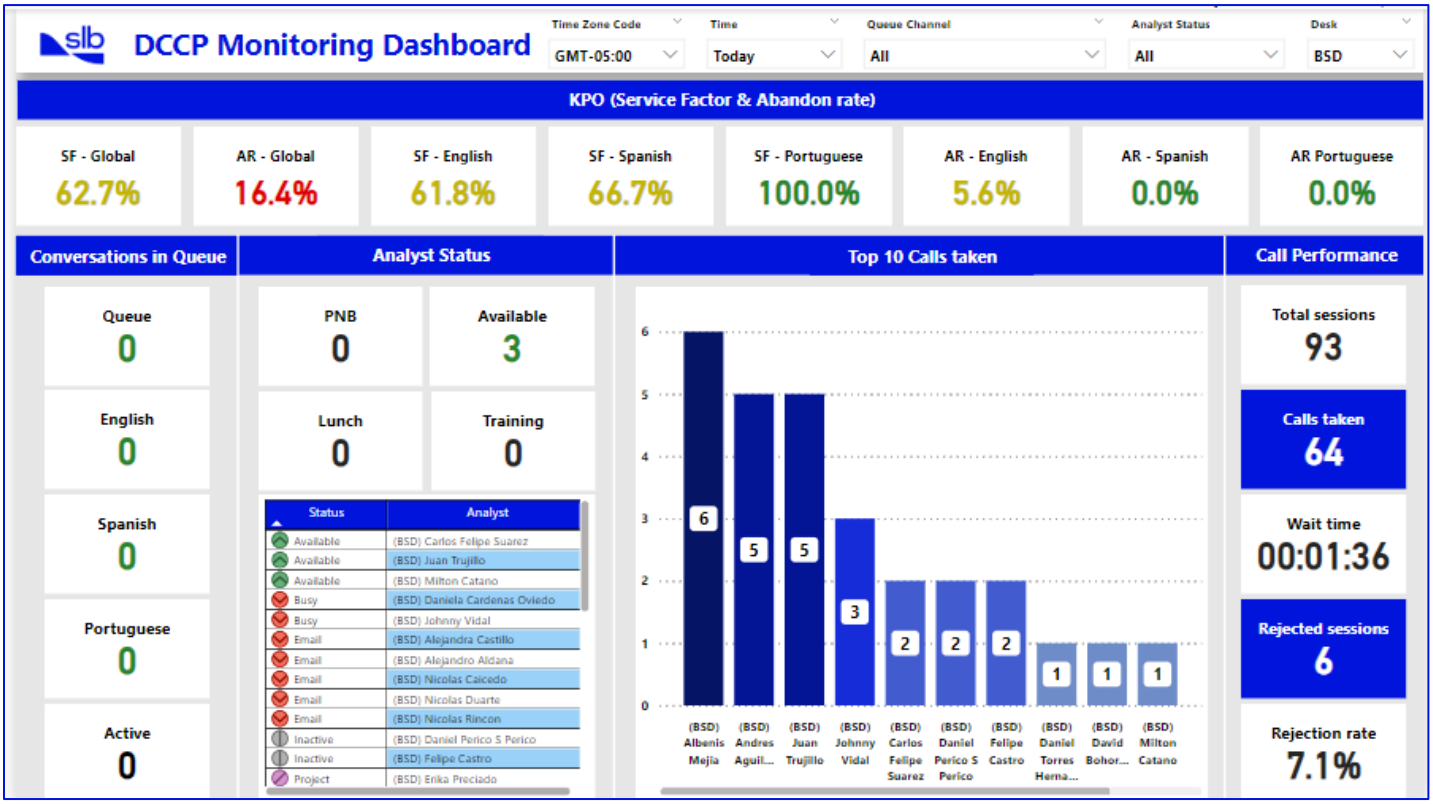


Figure 9 - DCCP Monitoring Dashboard - Analyst

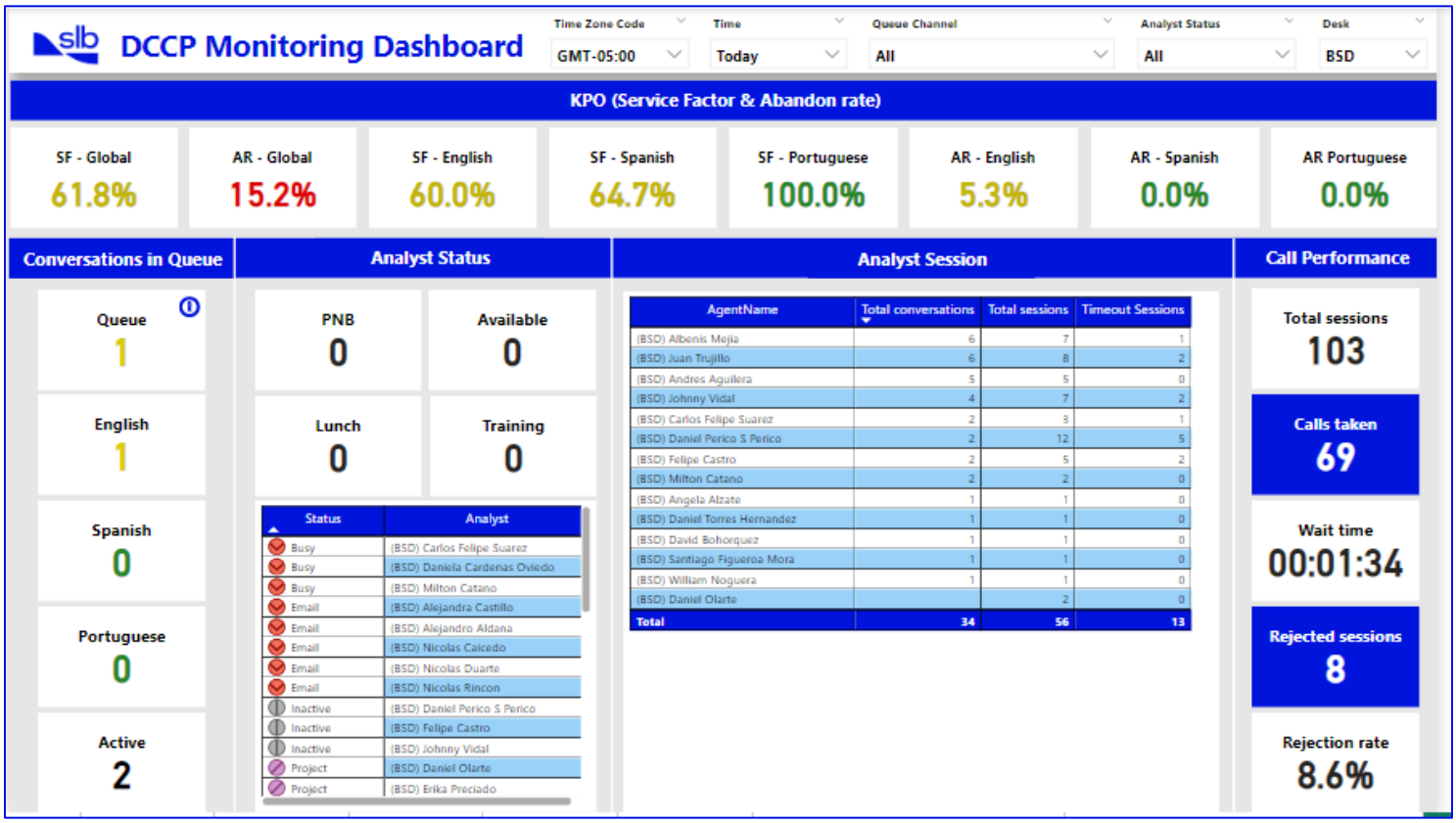


Figure 10 - DCCP Monitoring Dashboard - Team Leads & Coordinators

## 5.1. Service Factor.

This metric measures how quickly the customer service team responds to a customer's request. It's calculated by dividing the total wait time for customers who are waiting in the queue (after their issue has been escalated from a bot to a human agent) by the total number of customers who were served. This measure reflects the efficiency and availability of the agents. A lower value to answer indicates that customers can get their issues resolved more quickly and have a better experience with the service.

If a bot or IVR handles the customer before it escalates the issue to a human agent, the calculation is based on the time between the point when the bot or IVR escalates the incoming conversation to a human agent and the point when the agent accepts the conversation. If the customer reaches a human agent queue directly, the calculation is based on the time between the point when the customer creates the request and the point when a human agent accepts the conversation.

In other words, *this metric measures the percentage of customer conversations in which the speed to answer is analyzed. Dynamics 365 Omnichannel Agent Analytics displays six categories where the speed to answer is equal to or less than 10 seconds, 20 seconds, 30 seconds, 40 seconds, 60 seconds, and 120 seconds.*

For example, this is how the service level of 10s is calculated using DAX language in Power Query:

```
DIVIDE (
    SUMX (
        FactConversation,
        IF (
            FactConversation[ConversationFirstWaitTimeInSeconds] <= 10
                && FactConversation[IsAgentAccepted]
                && NOT FactConversation[DirectionCode],
            1,
            0
        )
    ),
    SUMX (
        FactConversation,
        IF (
            FactConversation[IsAgentAccepted]
                && NOT FactConversation[DirectionCode],
            1,
            0
        )
    ),
    BLANK ()
)
```

Figure 11 - Service level 10s from: https://learn.microsoft.com/en-us/dynamics365/customer-service/use/datamapping-realtime

In the Dashboard, a color range has been established to indicate the performance of the service factor during operations. For the service factor to be within an appropriate range, it should be between 80% and 100% (Green color). A warning range is between 60% and 80% (Yellow color). However, if it falls below 60%, it indicates that optimal improvement options should be considered during operations.

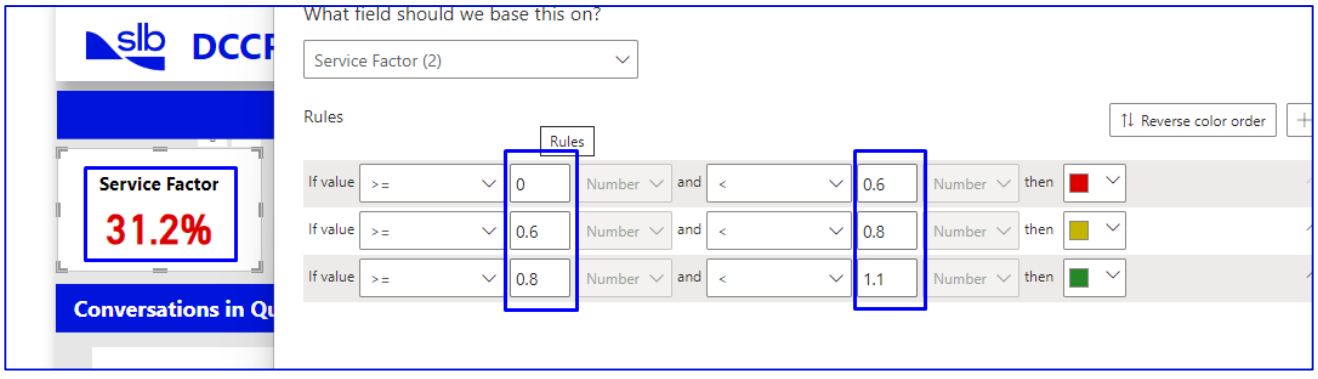


Figure 12 - Service Factor – Global

Furthermore, displaying the service factor by language enables better data segmentation, facilitating more effective and strategic management of customer service performance. This approach helps identify areas of opportunity and ensures a more personalized focus based on specific language needs of users.

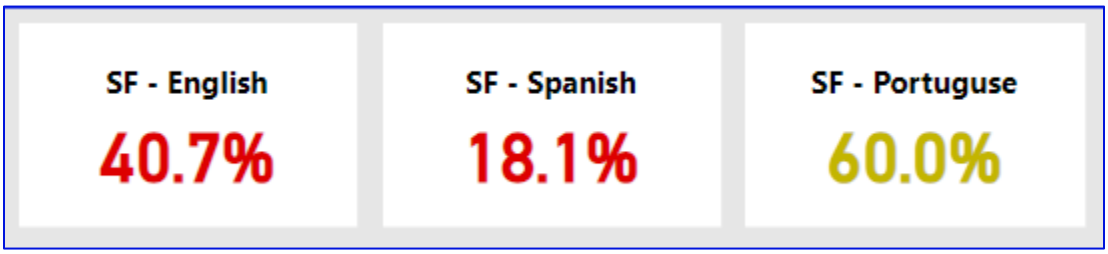


Figure 13 - Service Factor by BSD languages.

## 5.2. Abandon Rate

A conversation can be abandoned for multiple reasons. For example, a customer might be disconnected or might cancel the call because of a long waiting period, supervisors might forcibly close requests, or automatic system actions might be configured to respond to handle overflow. Abandoned conversations can lead to customer dissatisfaction because of a lack of assistance from the contact center. A high abandonment rate might require further investigation into operational metrics such as agent availability and queue distribution.

If a bot or IVR handles the customer before it escalates the request to a human agent, this metric is calculated as the number of conversations that were abandoned while customers were waiting for a human agent after the bot escalated the request. If a conversation is abandoned before a bot can be assigned, the conversation is considered abandoned. If the customer reaches a human agent queue directly, this metric is calculated as the number of incoming conversations that were abandoned. The conversation direction is Incoming. The channels that the conversation came in through are Messaging and Voice.

In other words, this metric is a measure of the percentage of incoming conversation requests that ended before customers were connected to a human agent. It's calculated by dividing the number of abandoned conversations by the number of bot-escalated conversations.

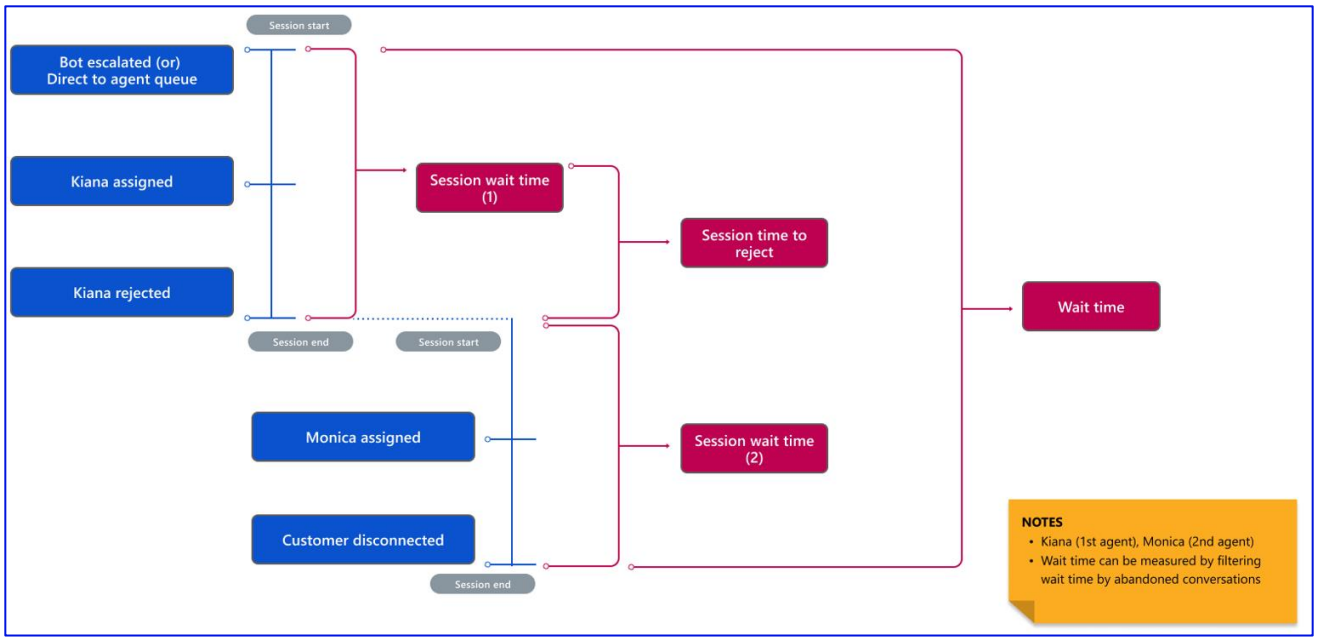


Figure 14 - Workflow for Abandon rate

Here's you can find of this measure is calculated by DAX language:

```
DIVIDE (
    SUMX (
        FactConversation,
        IF (
            FactConversation[IsAbandoned]
                && NOT FactConversation[DirectionCode],
            1,
            0
        )
    ),
    SUMX (
        FactConversation,
        IF ( NOT FactConversation[DirectionCode], 1, BLANK () )
    ),
    BLANK ()
)
```

Figure 15 - Abandon Rate from: https://learn.microsoft.com/en-us/dynamics365/customer-service/use/datamapping-realtime

For the visualization of the Abandon Rate metric, a color range has also been established. An optimal range is set between 0% and 5% (green color). A warning range is configured from greater than 5% up to 10% (yellow color). However, exceeding this value will result in the Abandon Rate being displayed in red, indicating that approximately 5 calls are being lost.


Figure 16 - Abandon Rate - Global

Similarly, this metric was analyzed by language because it not only provides a more detailed and accurate insight into customer service performance, but also facilitates the identification of specific areas for improvement and the implementation of more effective strategies tailored to each linguistic group served. This contributes to a more positive overall customer experience and a more efficient, customer-focused operation.


Figure 17 - Abandon rate by language.

## 5.3. Conversations in Queue

This metric is a measure of the time, in seconds, before a human agent responds to a customer's request. In other words, it represents the amount of time that the customer spends waiting for the first response from a human agent. Agent availability, a high volume of requests, and increased handle time are some factors that can affect customer wait time. A shorter wait time indicates that customers get faster issue resolution and have a better support experience.

If a bot or interactive voice response (IVR) handles the customer before it escalates the issue to a human agent, the calculation is based on the time between the point when the bot or IVR escalates the incoming conversation to a human agent and the point when the agent accepts the conversation. If the customer abandons the conversation, the calculation is based on the time between the point when the bot or IVR escalates the conversation to a human agent and the point when the customer disconnects the conversation. If the customer reaches a human agent queue directly, the calculation is based on the time between the point when the customer creates the request and the point when a human agent accepts the conversation. If the customer abandons the conversation, the calculation is based on the time between the point when the customer creates the request and the point when the customer disconnects the conversation.

In conclusion, *this metric is a count of customer requests that are currently awaiting agent assistance, or conversations that have had an agent assigned but are awaiting agent acceptance.*

Here's you can find of this measure is calculated by DAX language:

```
Conversations in queue =
    SUMX (
        FactConversation,
        IF (
            NOT FactConversation[DirectionCode]
                && ( FactConversation[StatusCode] == 1
                || ( FactConversation[StatusCode] == 2
                && FactConversation[StatusReason] == "Agent assigned, awaiting acceptance" ) ),
            1,
            0
        )
    )
```

Figure 18 - Conversations in queue from: https://learn.microsoft.com/en-us/dynamics365/customer-service/use/datamapping-realtime

In this case, the first card "Queue" refers to incoming calls in real-time, where a color range has been established. If there is not call it will be displayed in green. However, it will turn yellow as a warning if there is 1 user waiting for connection with an agent to resolve their issue. If it exceeds two calls, it will turn red because there may be more than three users needing attention as soon as possible.

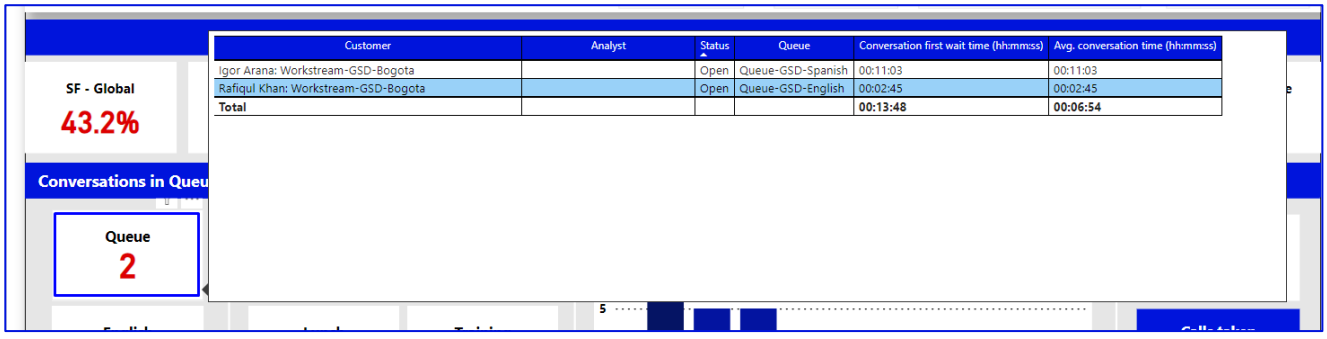


Figure 19 - Conversation in Queue - Global

In addition to displaying the number of calls, when hovering over each call entry, a tooltip will appear showing the client, call status, language, and wait time. This is done to monitor the analyst's response time upon receiving the client.

Similarly, it was also decided to categorize incoming calls by language so that analysts, coordinators, and team leads can manage their workload if another language is encountered that BSD cannot handle or utilize analysts who can speak a third language like Portuguese. The color range is established based on the global Queue metric.

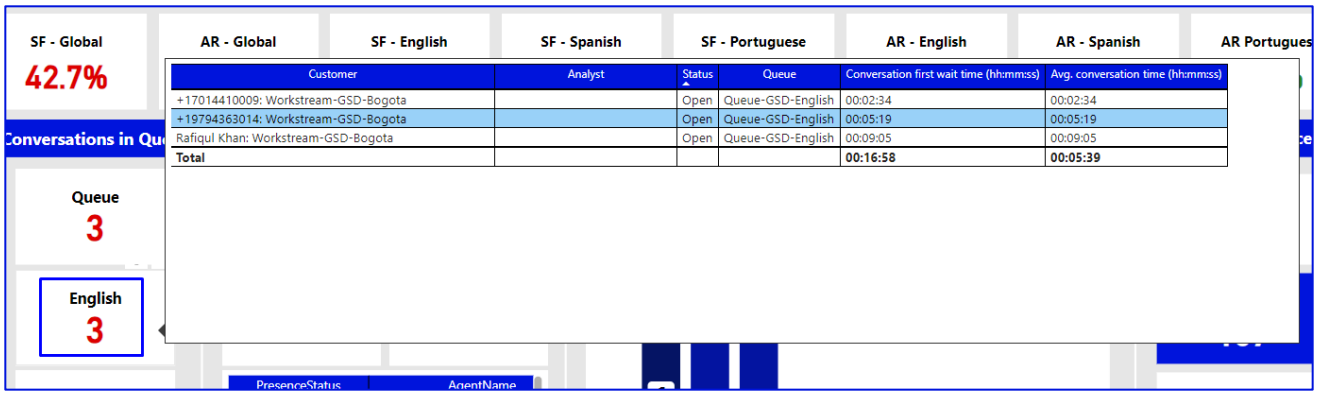


Figure 20 - Conversation in Queue by language

Additionally, another categorized card labeled "Active" was implemented, which displays the analyst alongside the user now they took the call, along with the elapsed time. This was done with the aim of not disturbing busy analysts and optimizing operational control, utilizing available analysts if there are calls in queue.

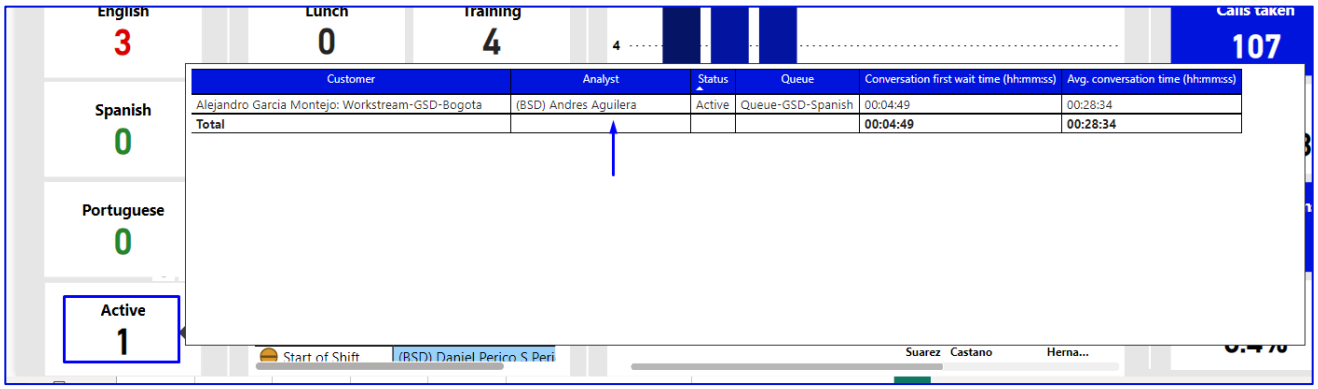


Figure 21 - Conversations in Queue attended by Analyst

## 5.4. Analyst Status

In this section of the DCCP Monitoring Dashboard, you can visualize the agent's base presence along with its associated text. It is important to note that in the customer service workspace, the status can be updated in two ways:

### 5.4.1. Manually:

The agent can view and set the presence manually by selecting the presence icon in the navigation bar. In the Set Presence State dialog, select a state from the list. The list displays the following standard presence states:

| | |
|---|---|
| Available | End of Shift |
| Away | Remote Control |
| Busy | Start of Shift |
| Do not disturb | Training |
| Email | |

5.4.2. Automatically:

When agents start working, the Omnichannel Platform for Customer Service sets their presence state based on their capacity as follows:

- When operating at full capacity, the presence state is set to Do Not Disturb.
- If only part of the capacity is being used, the presence state is set to Busy.
- If no capacity is being used, the presence state is set to Available.
- If agents already have 10 open sessions, which is the maximum limit for multiple sessions, and a new work item enters, the presence is set to Do Not Disturb.
- If agents miss a notification and the missed notification setting is enabled, the presence is set to Inactive.
- If agents reject a work notification and the agent rejection notification setting is enabled, the presence is changed to Do Not Disturb.
- For voice and live chat channels, you can prevent assigning new work items when agents miss or reject notifications. Make sure to exclude "Inactive" and "Do Not Disturb" states from the allowed presence configuration of the corresponding channel workflow.
- If the agent gets disconnected, the system captures the current presence state and immediately sets it to "Disconnected." If the agent logs in again within 2.5 minutes, the system restores the presence state. If the agent does not log in within 2.5 minutes, the system recalculates the presence that needs to be set. Agent disconnection includes the following actions:

    - - Closing the browser tab of the Customer Service workspace.
    - - Logging out of the Customer Service workspace.
    - - Device shutdown or session termination.
    - - Experiencing internet interruption.

Based on these updates made by the analysts, their presence will be automatically reflected in the DCCP Monitoring Dashboard where the coordinator overseeing the operational process can assess the analysts' statuses. It has been decided to represent the 4 most used states in the customer service workspace with cards, as the importance of these states directly affects operations. These states are: Do Not Disturb (PNB), Available, Lunch, Training (states where the analyst will be briefly absent during the operational day).

A distinctive feature of these cards is to visualize the duration for which each state was set, enabling the evaluation of the analyst's reliability and ensuring adherence to required times to maintain balanced operations.

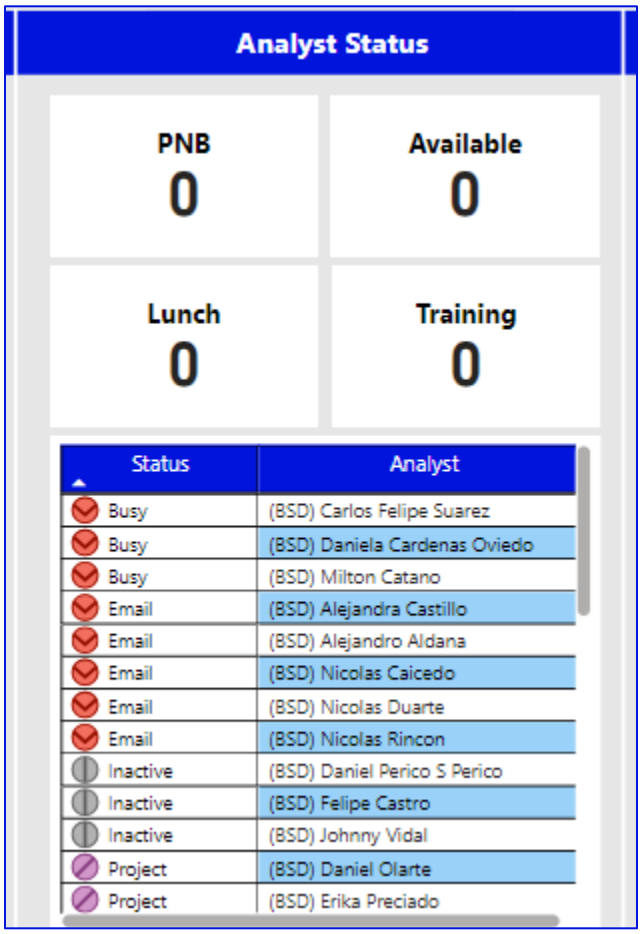


Figure 22 - Analyst Status

However, it was decided to implement a color change for the Available state. The established color range aims to maintain a certain number of available analysts to avoid potential high workload and reduce customer wait times. The color range is set as follows: the number will be shown in green when there are more than 3 available analysts, yellow when there are 1 to 2 analysts available, and red when no analyst is available for operations.

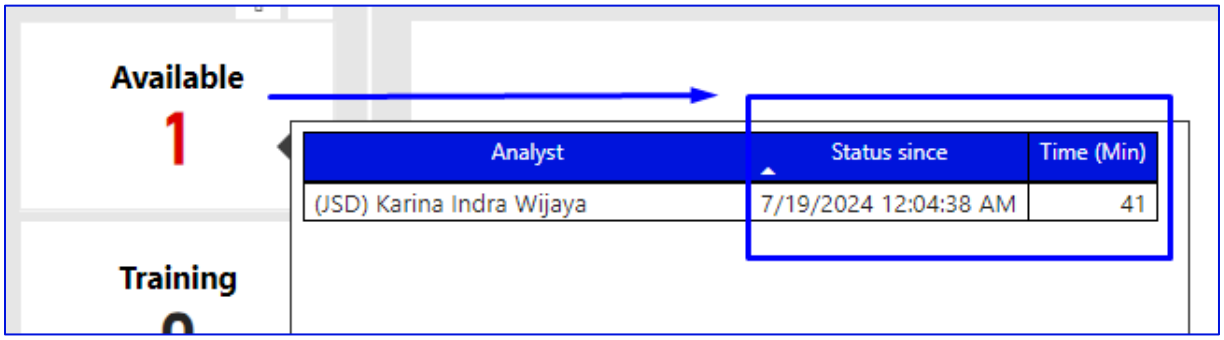


Figure 23 - Analyst Status by available

Furthermore, the exact time when the analyst enters this state is noted, along with the minutes elapsed since then. This is done to ensure that analysts adhere to the required times for other visible states, such as PNB (Non-Low Pause) and lunch, where specific time limits apply.

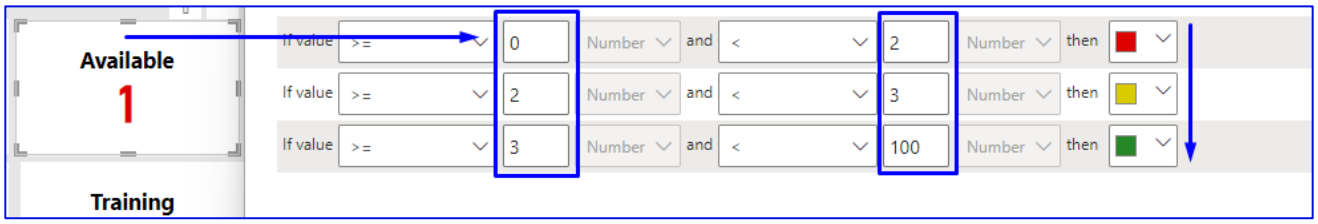


Figure 24 - Color Range Based on Availability Status

Ultimately, for the remaining states, the matrix visualization method was employed. This method allows us to observe the presence of each state alongside the respective analyst's name. The purpose of this was to monitor the established schedules assigned to each analyst and to review their availability in each of the assigned roles during operations.

| Status | Analyst |
|---|---|
| Busy | (BSD) Carlos Felipe Suarez |
| Busy | (BSD) Daniela Cardenas Oviedo |
| Busy | (BSD) Milton Catano |
| Email | (BSD) Alejandra Castillo |
| Email | (BSD) Alejandro Aldana |
| Email | (BSD) Nicolas Caicedo |
| Email | (BSD) Nicolas Duarte |
| Email | (BSD) Nicolas Rincon |
| Inactive | (BSD) Daniel Perico S Perico |
| Inactive | (BSD) Felipe Castro |
| Inactive | (BSD) Johnny Vidal |
| Project | (BSD) Daniel Olarte |
| Project | (BSD) Erika Preciado |
| Project | (BSD) Jorge Onate |
| Project | (BSD) Juan Gasca |
| Project | (BSD) Luis Rojas |
| Project | (BSD) Monica Diaz |
| Remote Control | (BSD) Albenis Mejia |
| Remote Control | (BSD) Andres Aguilera |
| Remote Control | (BSD) Angela Alzate |
| Remote Control | (BSD) Daniel Torres Hernandez |
| Remote Control | (BSD) David Bohorquez |
| Remote Control | (BSD) David Granados |
| Remote Control | (BSD) Juan Trujillo |
| Remote Control | (BSD) Laura Angarita |
| Remote Control | (BSD) Laura Coba |

Figure 25- Analyst Status Table

## 5.5. Top ten calls taken

In this section, we observe the top 10 analysts based on their call handling performance during operational hours. Put simply, each analyst within this top group will have the opportunity to view the number of calls answered and see the names of the clients they assisted.

This visualization encourages analysts to assess their workplace performance, motivating them to enhance their efficiency in customer interactions during calls. Below is how the visualization looks:

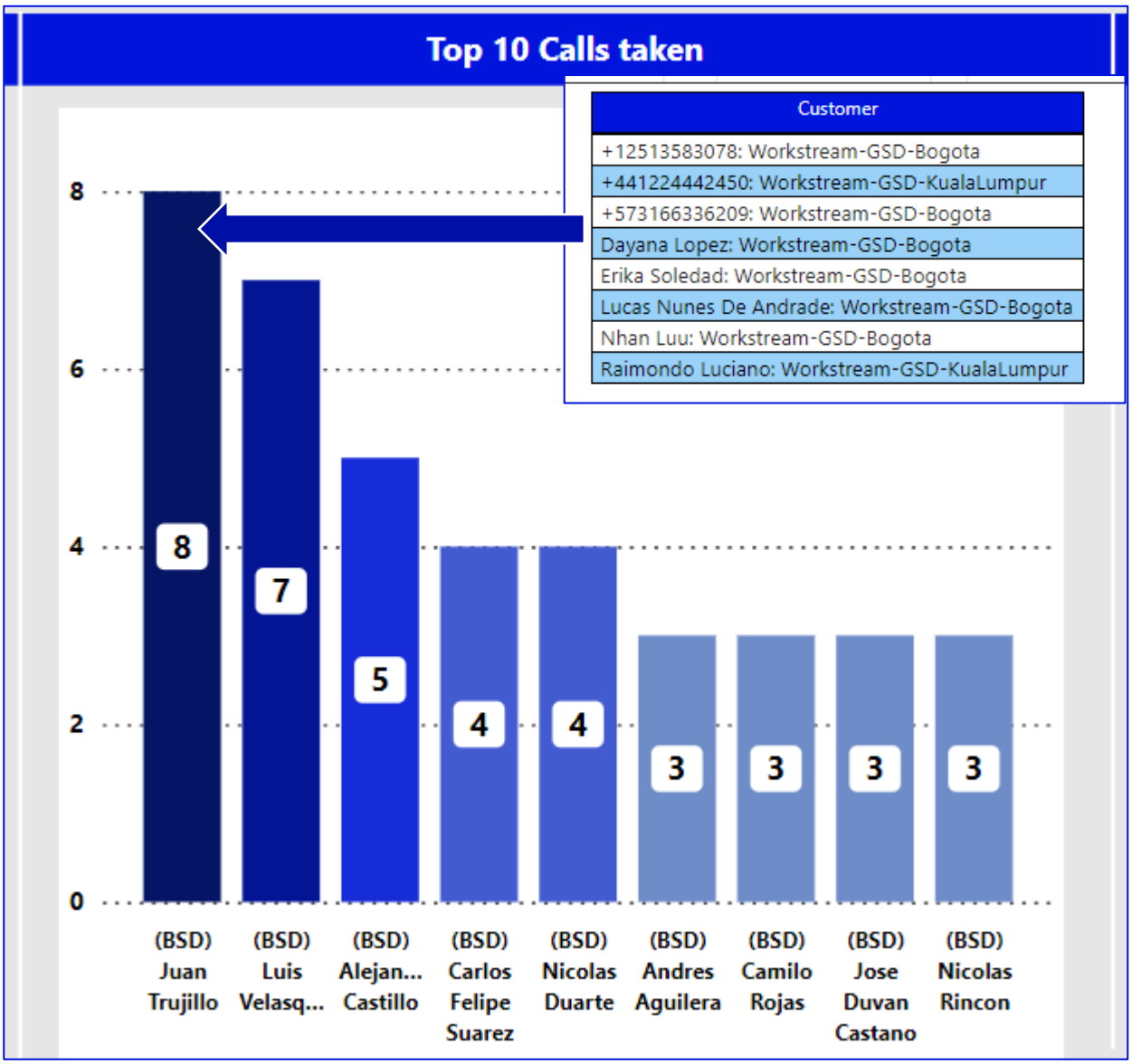


Figure 26 - Top Ten Analysts by Calls Handled

## 5.6. Call Performance

In this section of the DCCP Monitoring Dashboard, the person in charge of operations will have the opportunity to evaluate the workload of the contact center, measure operational efficiency and responsiveness, identify issues such as long wait times and rejections, and ultimately optimize resource allocation and enhance the employee experience at SLB.

1. *Total session*: This metric is a measure of the total number of sessions that were presented to or handled by agents.
2. *Incoming conversations (calls taken):* This metric is a measure of the total number of conversation requests that were initiated by customers across all channels and received by the contact center
3. *Wait time:* This metric is a measure of the time, in seconds, that a customer spends waiting in a specific queue before an agent accepts their request. If the customer abandons the request, or if the conversation is transferred to another queue, the calculation is based on the time between the point when the customer request arrives in the queue and the point when the request is closed.
4. *Session rejection date*: This metric is a measure of the rate at which agents reject work that is assigned to them. It's calculated by dividing the total number of sessions that agents rejected by the total number of sessions that were assigned to them.
5. *Rejected sessions:* This metric is a measure of the total number of times that agents rejected work that was assigned to them.

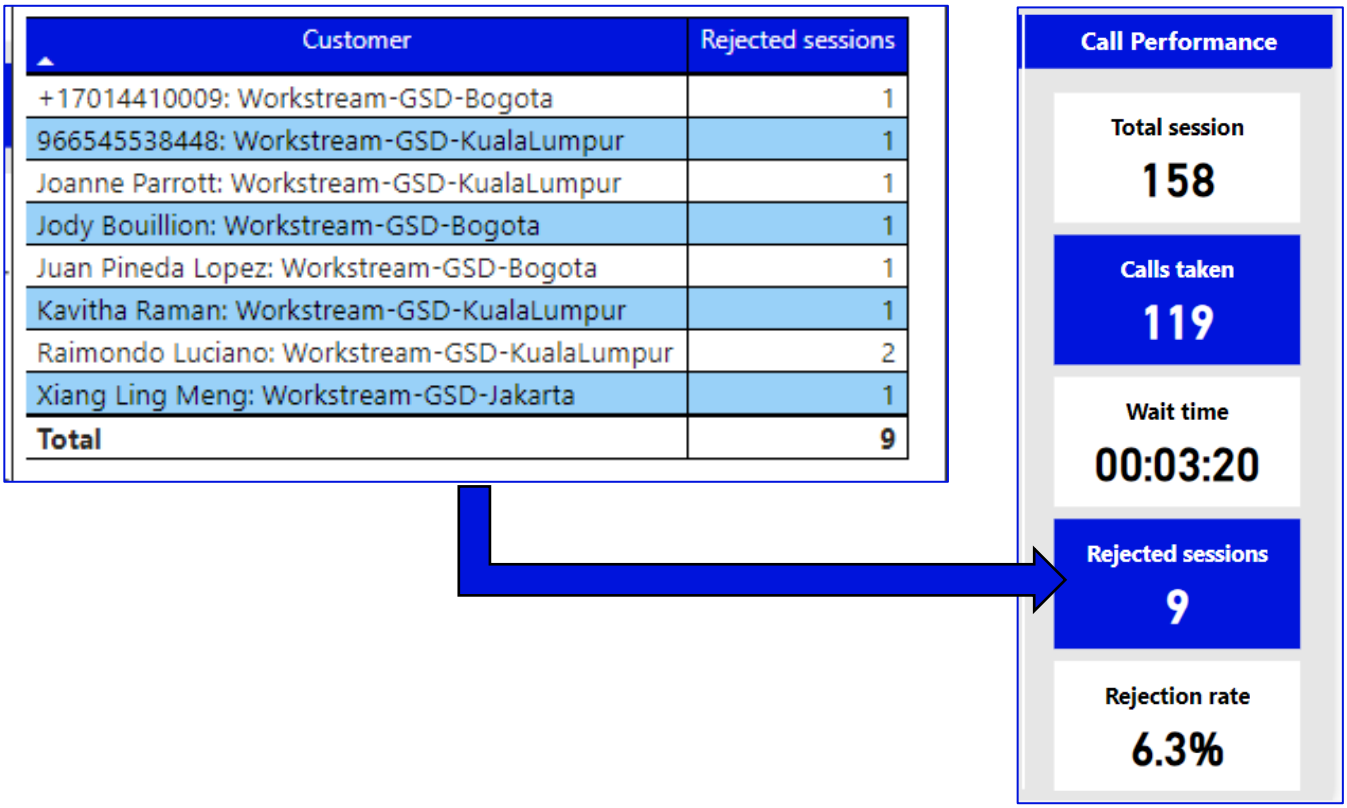


Figure 27 - Call Handling Performance

## 5.7. Filter information displayed on DCCP Workspace by Analyst.

Due to the security roles and permissions that exist between analysts, team leads, and coordinators, two workspaces were created. The main difference lies in how information is filtered. For analysts, a standard filter was implemented so they can only see the BSD (Bogota Service Desk) by default, which is their designated area. The conditional filters for this dashboard are:

### 5.7.1. Time range

- Today: View all conversations that have begun since 12 AM in the selected time zone, in any state or province.
- Last 24 hours: View all conversations that have begun in the last 24 hours, in any state or province.
- Include open conversations beyond 24 hours: View all conversations that have begun in the last 24 hours, in any state or province. In addition, view all conversations that have begun in the last three days and that are still open.

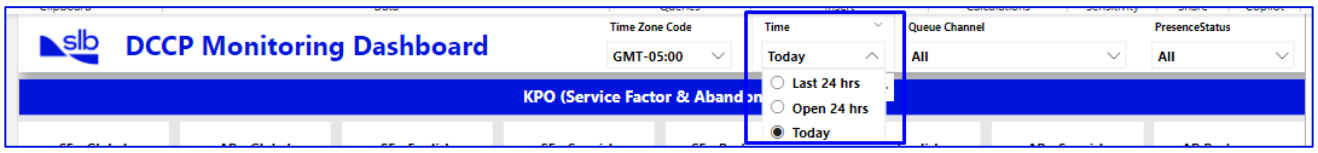


Figure 28 - Time range

### 5.7.2. Time Zone.

This dimension represents the time zone that is used to calculate and show metrics across the dashboards. The available options are standard time zones. For example, GMT-5/UTC-5 that is the thirty-second time zone on Earth, located at the 75th meridian west, places countries under a standard time that is 5 hours behind Greenwich Mean Time (GMT).

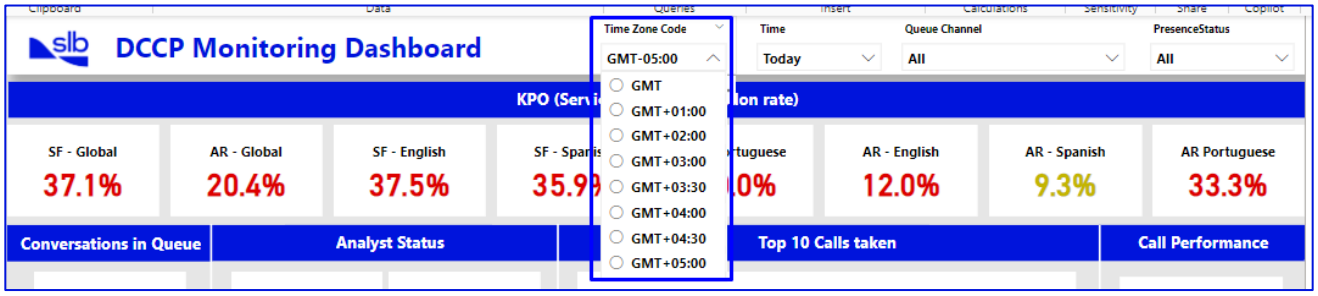


Figure 29 - Time zone code

### 5.7.3. Queue Channel

This dimension represents the name of the omnichannel agent.

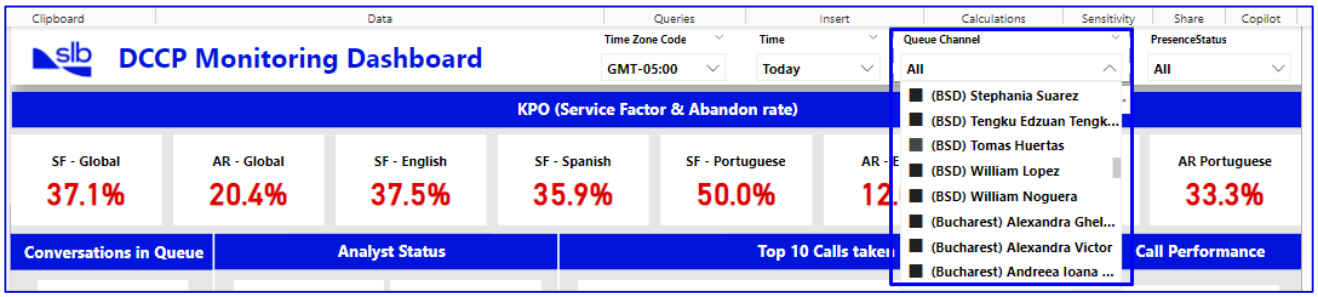


Figure 30 - Queue Channel

### 5.7.4. Agent Presence

This dimension represents the statuses that are available for agents. The out-of-box options include Available, Away, Busy, Do Not Disturb, Email, End of Shift, Inactive, Lunch, Meeting, Offline, PNB, Project, Remote Control, Start of Shift, Training.

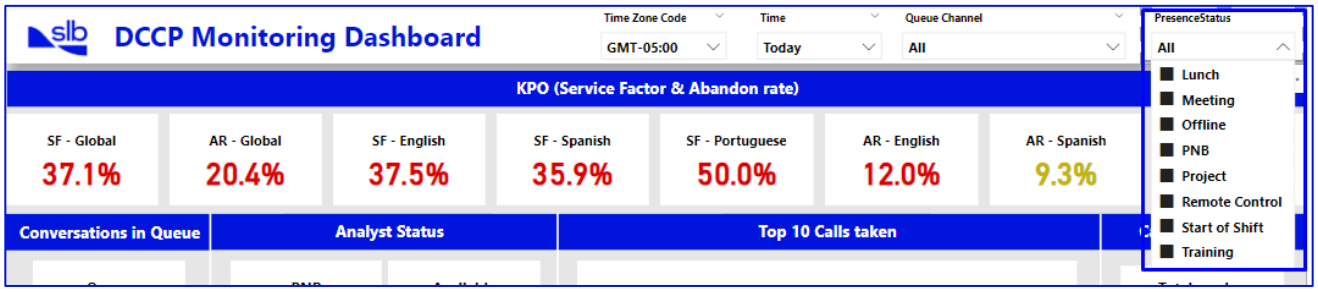


Figure 31 - Agent Presence

### 5.7.5. Service Desk

This option allows filtering by the location of the service desk, expanding beyond the BSD (Bogota Service Desk) to include other backup desks such as the Bucharest Service Desk, Jakarta Service Desk, and Kuala Lumpur Service Desk. This filter only works with Analyst Status and Top tell calls taken.

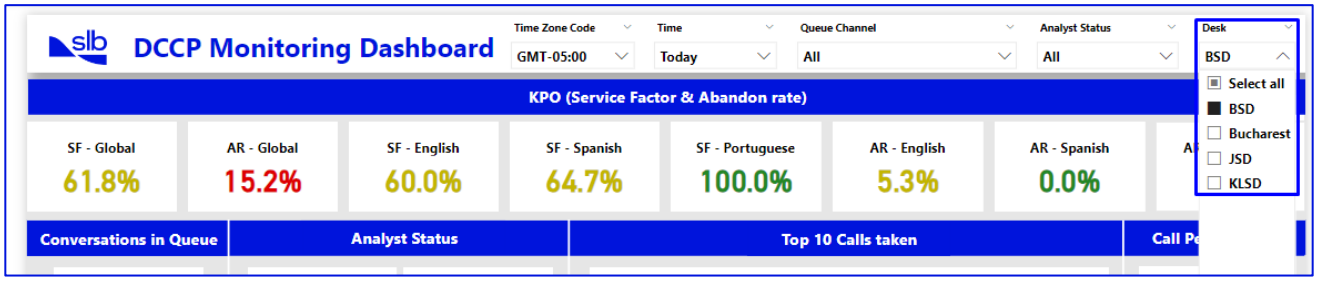


Figure 32 - Service Desk

However, that filter was calculated by creating a new column. The calculation is expressed in DAX language:

```
Agentes_Categorizados =
VAR CategoriaNombre =
    SWITCH (
        TRUE (),
        CONTAINSSTRING ( 'DimAgent'[AgentName], "BSD" ) || 'DimAgent'[AgentName] = "Catalina Baquero" || 'DimAgent'[AgentName] = "Juan Garcia" || 'DimAgent'[AgentName] = "Johan Sebastian Gutierrez",
        " BSD ",
        CONTAINSSTRING ( 'DimAgent'[AgentName], "Bucharest" ), " Bucharest ",
        CONTAINSSTRING ( 'DimAgent'[AgentName], "KLSD" ), " KLSD ",
        CONTAINSSTRING ( 'DimAgent'[AgentName], "JSD" ), " JSD ",
        "Sin categoría"  // Valor por defecto si ninguna condición se cumple
    )
RETURN
    CategoriaNombre
```

Figure 33 - Desk - breakdown dax formula

Breakdown of the DAX Formula

- Definition of ***VAR Categories***: The formula uses a variable `CategoriaNombre` to determine the category for each agent. The variable stores the result of a `SWITCH` function, which is a conditional function in DAX.

- Usage of `***SWITCH***`
  - The `SWITCH` function evaluates an expression and returns a result that matches the first true condition it finds.
  - In this formula, `SWITCH` is used with the `TRUE()` expression, which allows evaluating multiple conditions sequentially.

- Conditions within `SWITCH`: Each condition within `SWITCH` is evaluated using `CONTAINSSTRING` or direct comparisons:

  -`CONTAINSSTRING ( 'DimAgent'[AgentName], "BSD" ) || 'DimAgent'[AgentName] = "Catalina Baquero" || 'DimAgent'[AgentName] = "Juan Garcia" || 'DimAgent'[AgentName] = "Johan Sebastian Gutierrez`**: This checks if the agent's name contains the string "BSD" or if it matches any of the specific names provided ("Catalina Baquero", "Juan Garcia", "Johan Sebastian Gutierrez"). If any of these conditions are true, `CategoriaNombre` is set to " BSD ".

  -`CONTAINSSTRING ( 'DimAgent'[AgentName], "Bucharest" )`: Checks if the agent's name contains the string "Bucharest". If true, `CategoriaNombre` is set to " Bucharest ".

  - `CONTAINSSTRING ( 'DimAgent'[AgentName], "KLSD" )`: Checks if the agent's name contains the string "KLSD". If true, `CategoriaNombre` is set to " KLSD ".

  - `CONTAINSSTRING ( 'DimAgent'[AgentName], "JSD" )`: Checks if the agent's name contains the string "JSD". If true, `CategoriaNombre` is set to " JSD ". If none of these conditions are true, the default value will be "Sin categoría" (which translates to "Uncategorized").

- Returning the Result: The `RETURN` function outputs the value of `CategoriaNombre`, which contains the assigned category based on the evaluated conditions for the agent's name.

- Summary

The `Agentes_Categorizados` formula classifies agents into different categories based on their names. It uses `CONTAINSSTRING` to search for substrings within the agent's name and direct comparisons for specific names. If the agent's name meets any of the specified conditions, a specific category is assigned; otherwise, it defaults to "Sin categoría" (Uncategorized).

This approach is useful for categorizing data based on patterns in names or attributes, and the use of `SWITCH` allows handling multiple conditions clearly and efficiently.

## 5.8. Filter information displayed on DCCP Workspace by Team Leads.

In the DCCP Monitoring Dashboard for Team Leads & Coordinators, alongside implementing filters for time zone code, time, queue channel, and agent presence status, a new option has been introduced. This option allows filtering by the location of the service desk, expanding beyond the BSD (Bogota Service Desk) to include other backup desks such as the Bucharest Service Desk, Jakarta Service Desk, and Kuala Lumpur Service Desk.

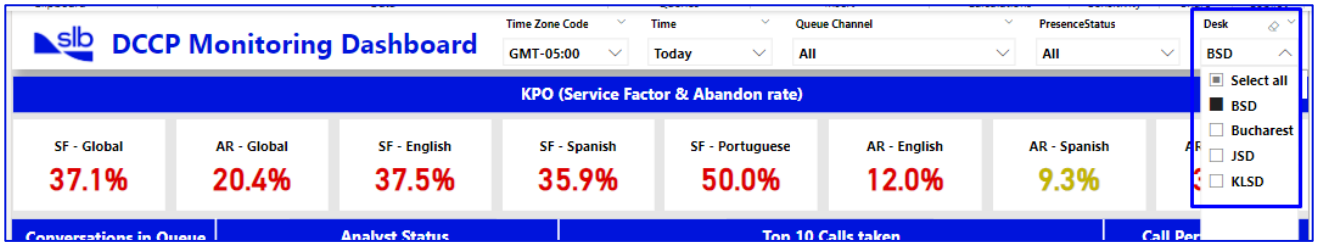


Figure 34 - Service Desk filter

This was implemented with the purpose of identifying which analysts are available for a necessary HOT transfer if the BSD's operating hours end and immediate attention is required by the user. It's important to note that these filters naturally apply only to 2 sections of the DCCP Monitoring Dashboard: Analyst Status and Top Ten Calls Taken. For example, one of the analysts requested a hot transfer before the end of the BSD work shift at 7:00 PM. The hot transfer was carried out with an analyst from Jakarta, as shown below."

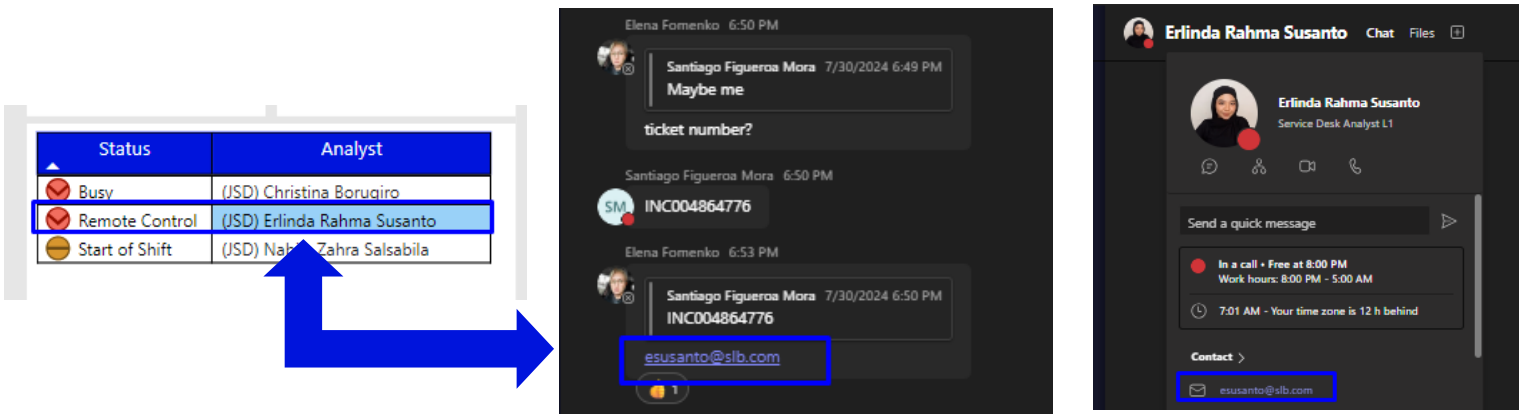


Figure 35 - HOT Transfer example

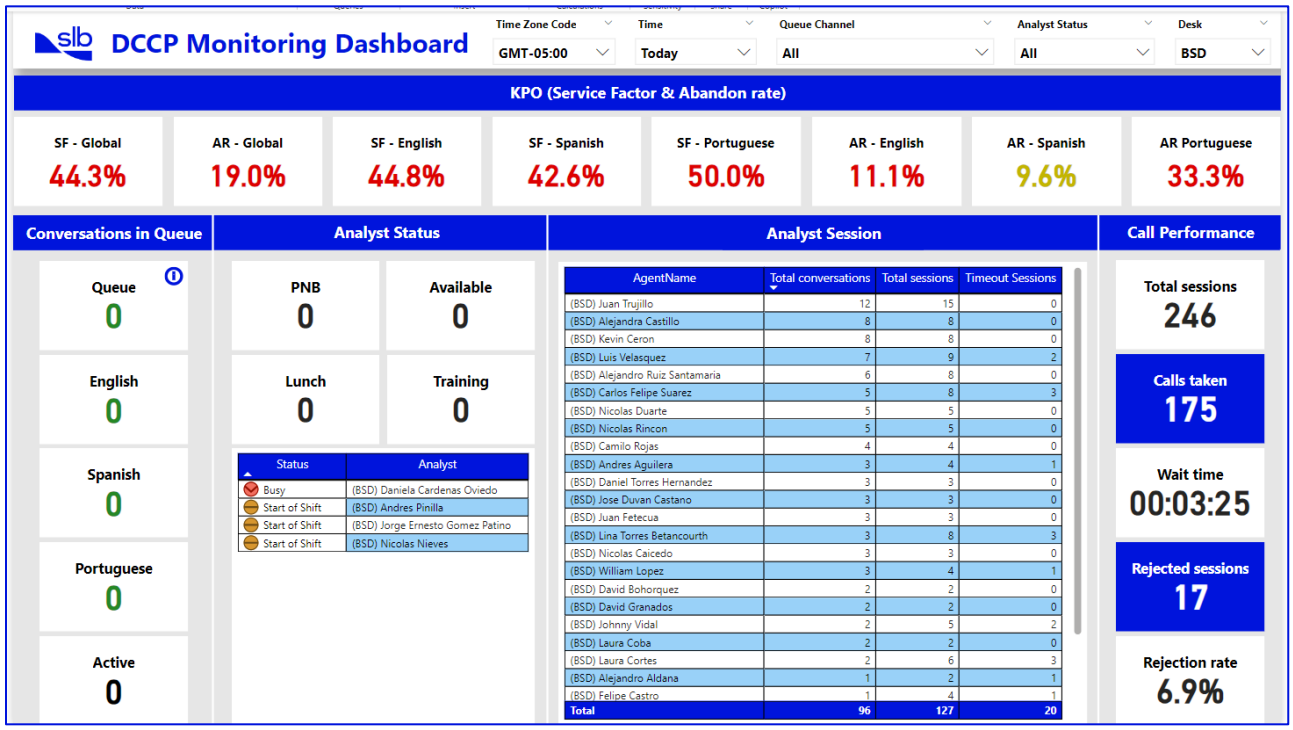


Figure 36 - Bogota Service Desk

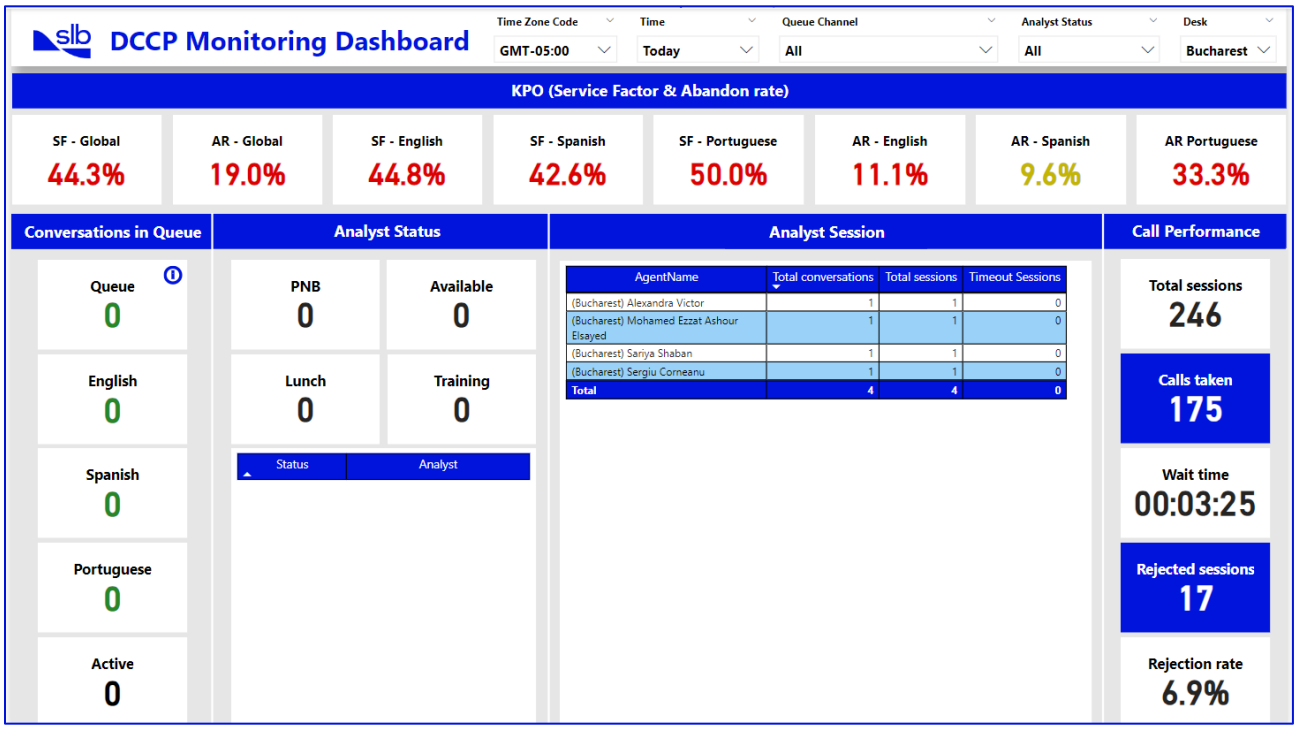


Figure 37 - Bucharest Service Desk

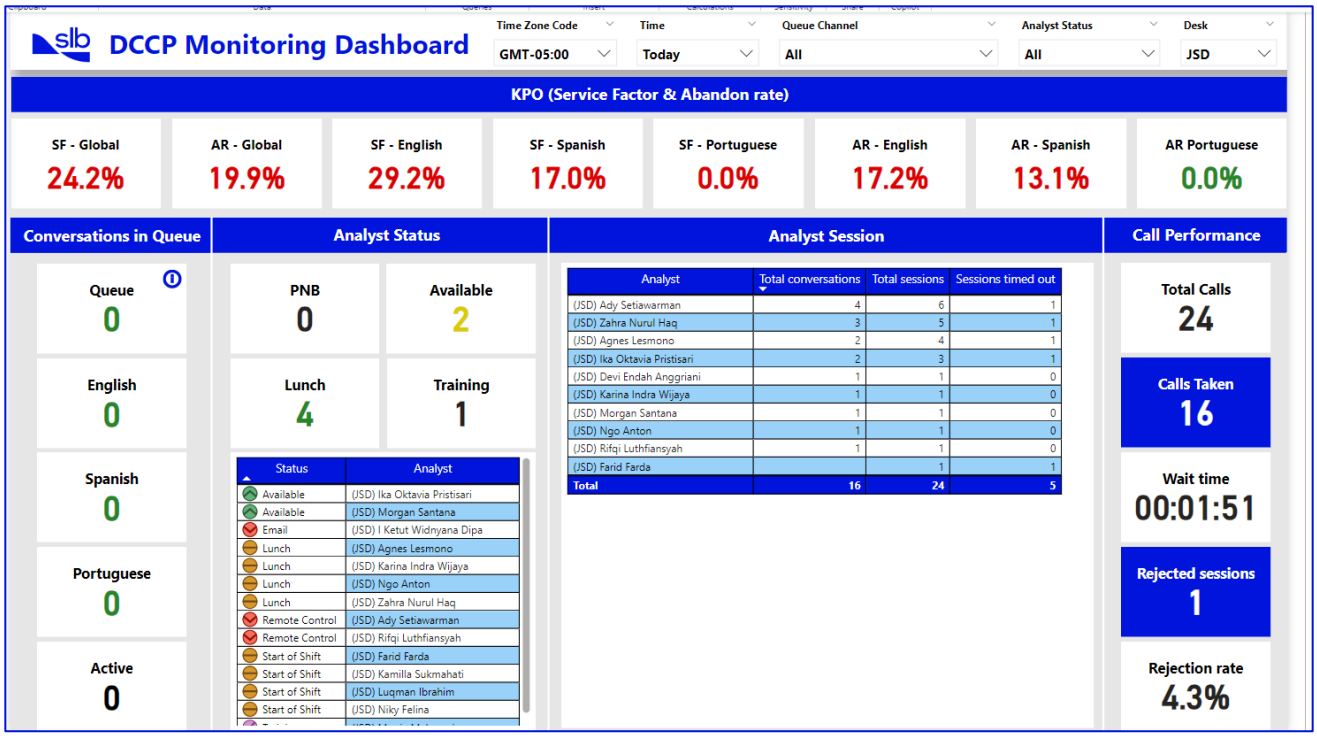


Figure 38 - Jakarta Service Desk

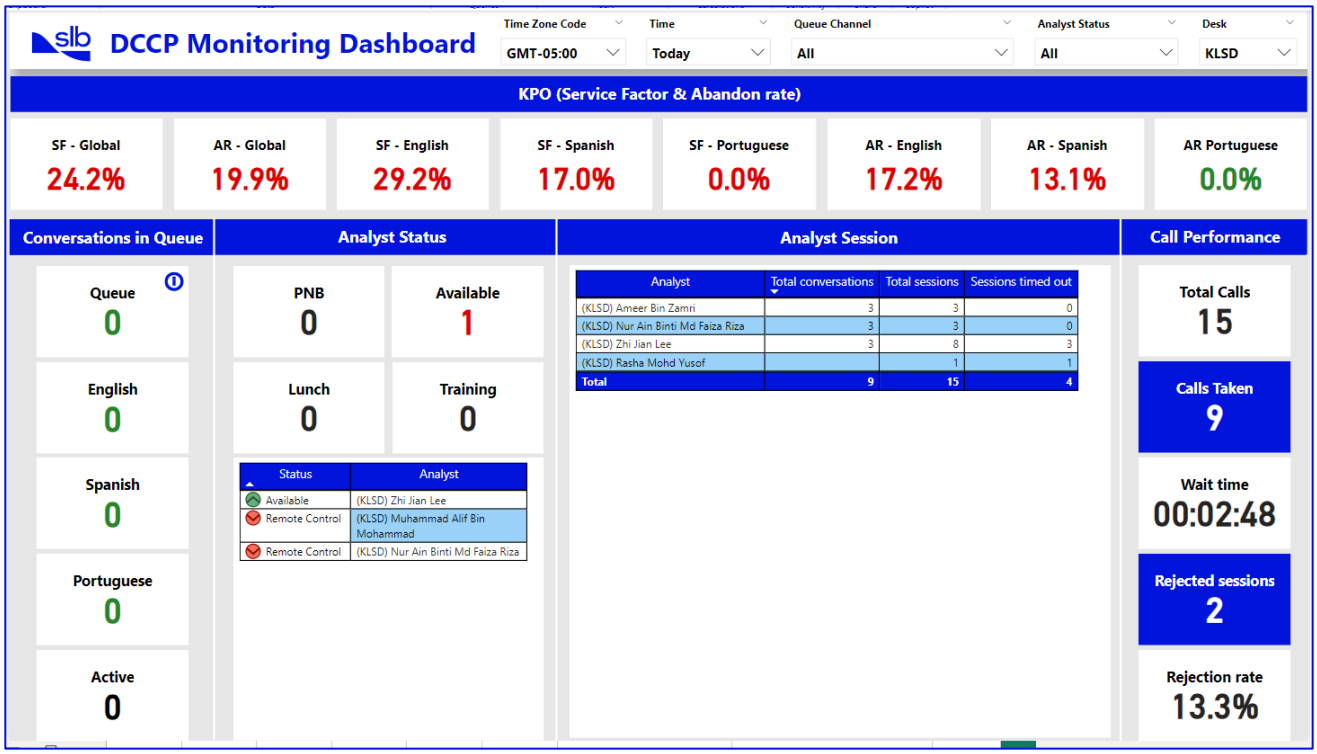


Figure 39 - Kuala Lumpur Service Desk

## 5.9. DCCP Omnichannel Agent Dashboard

To enhance the optimization of the DCCP Monitoring Dashboard, a new button has been added for direct access to the Omnichannel Agent Dashboard. This addition aims to improve mobility and streamline access. Analysts and backup coordinators can now easily navigate to the Omnichannel Agent Dashboard by simply clicking the icon below.

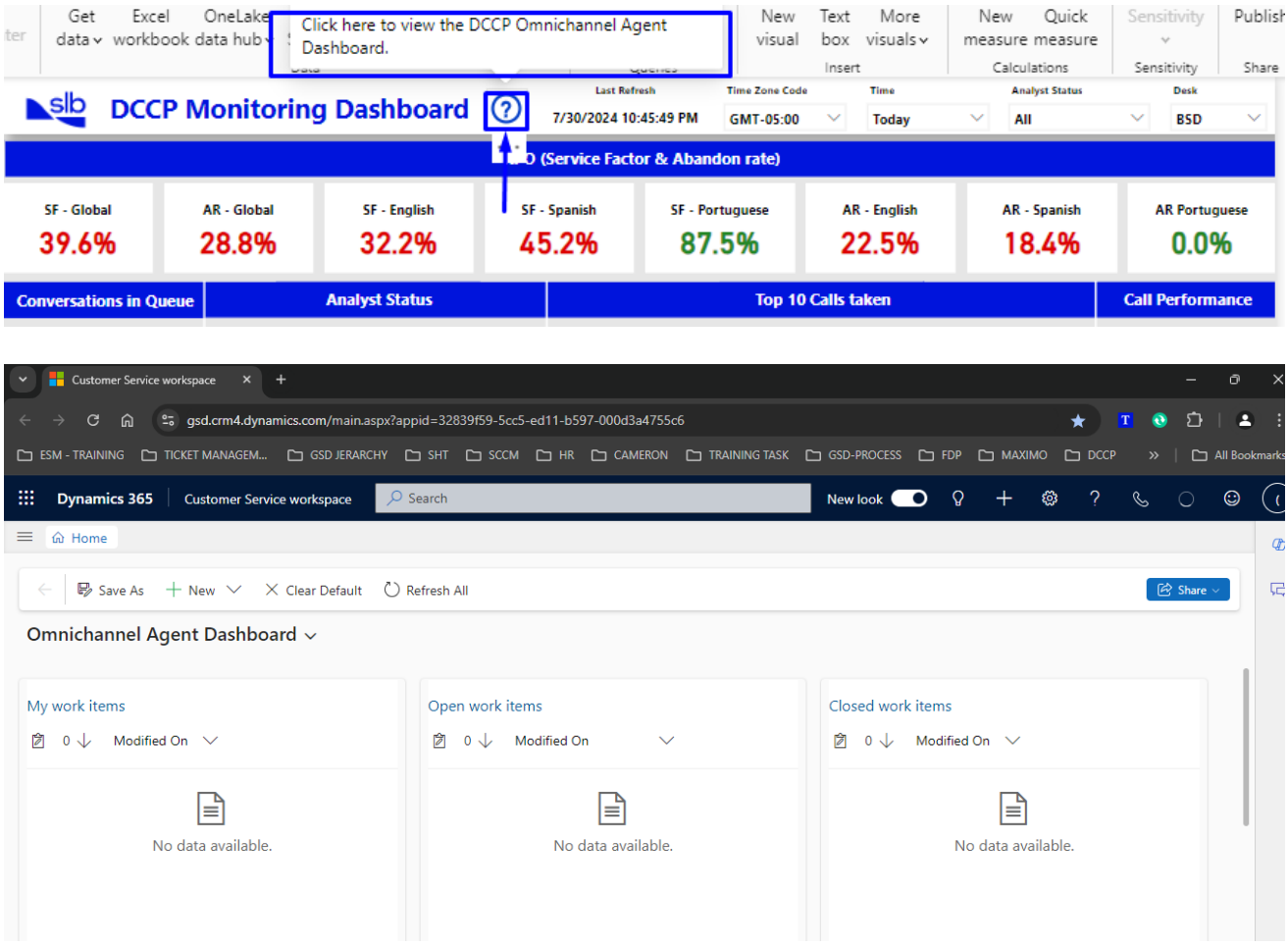


Figure 40 - DCCP Omnichannel Agent Dashboard shortcut

## 6. Refresh time

However, one of the key features for real-time operation monitoring is that the report should automatically update at regular intervals, given that calls are received at any time of day. However, this option is currently disabled because when publishing the dashboard connected to the Dynamics 365 semantic model, it defaults to a 15-minute interval set by the administrator. Work is underway with the Power BI team to address this.

The workaround currently available is to refresh it manually. To do so, simply click on this button located here:

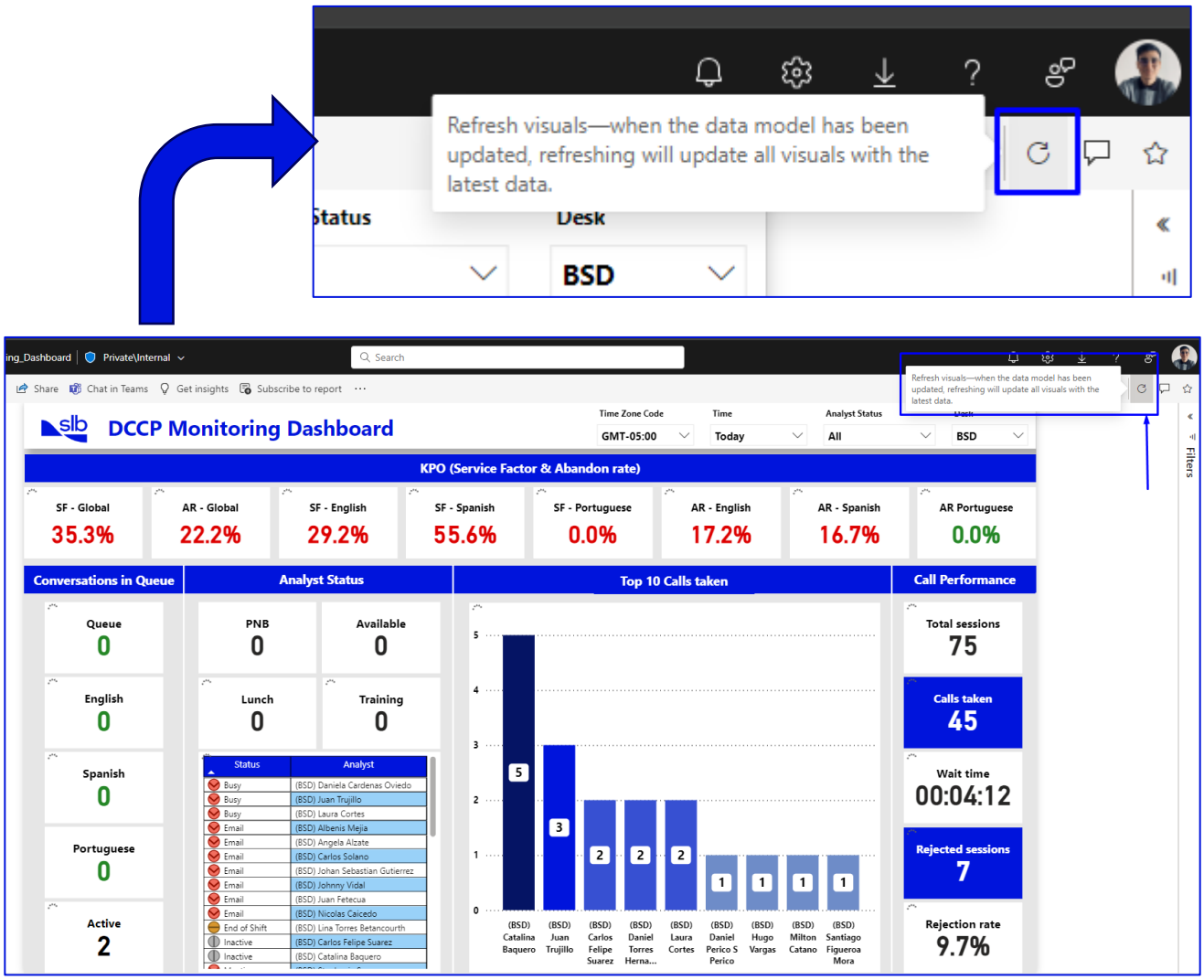


Figure 41 - DCCP Monitoring Dashboard - refresh time

## 7. Last Refresh

Since the Dashboard does not update automatically at short intervals (its default update is every 15 minutes), it has been decided to add a 'Last Update' section. This section displays the exact date and time of the last update, allowing for more precise monitoring of the information presented on the Dashboard.

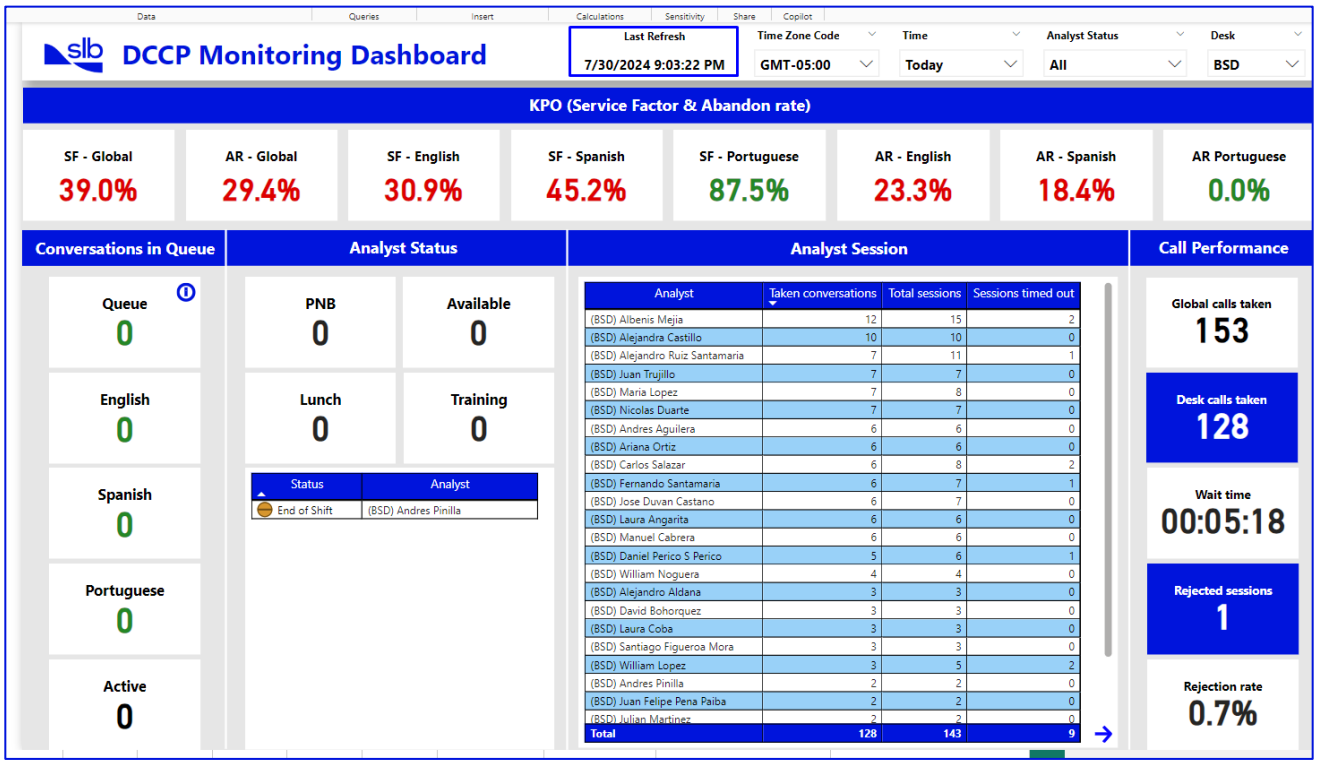


Figure 42 - Last Refresh DCCP Monitoring Dashboard

To implement the "Last Update" functionality, a table has been created to record the current time value. As shown below:

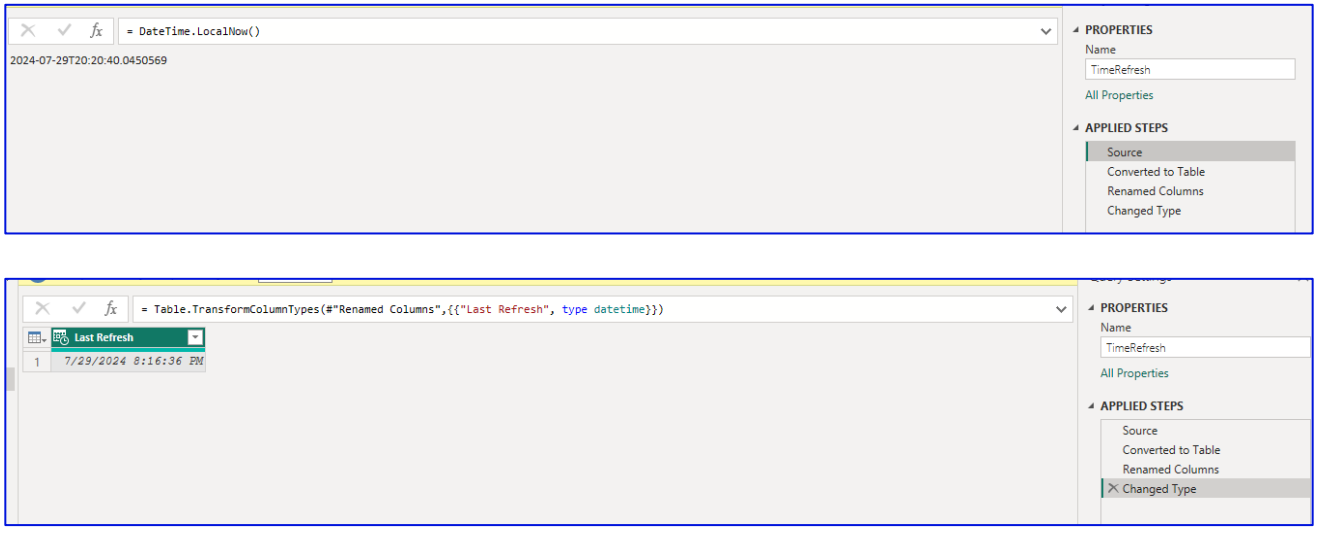


Figure 43 - Last Refresh creation - DCCP Monitoring Dashboard

Based on the local time, a measure was created to determine the time offset relative to GMT. This measure translates a time zone code (such as "GMT+03:00" or "GMT-05:00") to its corresponding offset in hours from GMT. It uses a predefined table of time zones and returns the offset in hours. If the time zone code is not in the table, the measure returns a blank value.

```
SelectedTimeZoneOffset =
VAR SelectedZone = SELECTEDVALUE('DimTimeZone'[TimeZoneCode], "GMT+00:00")
RETURN
SWITCH (
    SelectedZone,
    "GMT+00:00", 0,
    "GMT+01:00", 1,
    "GMT+02:00", 2,
    "GMT+03:00", 3,
    "GMT+04:00", 4,
    "GMT+05:00", 5,"GMT+06:00", 6,
    "GMT+07:00", 7,
    "GMT+08:00", 8,"GMT+09:00", 9,
    "GMT+10:00", 10,
    "GMT+11:00", 11,"GMT+12:00", 12,
    "GMT+13:00", 13,
    "GMT-01:00", -1,
    "GMT-02:00", -2,
    "GMT-03:00", -3,
    "GMT-04:00", -4,
    "GMT-05:00", -5,"GMT-06:00", -6,
    "GMT-07:00", -7,
    "GMT-08:00", -8,"GMT-09:00", -9,
    "GMT-10:00", -10,
    "GMT-11:00", -11,"GMT-12:00", -12,
    "GMT-13:00", -13,
    BLANK()
)
```

Figure 44 - Time zone acquire

Based on the previous code, We have developed the `AdjustedLastRefresh` function that adjusts the current time according to the time offset specified by `SelectedTimeZoneOffset`. First, the function retrieves the current time and the offset in hours. Then, it converts the time offset to days and adds it to the current time to calculate the local adjusted time according to the selected time zone.

```
AdjustedLastRefresh =
VAR OffsetHours = [SelectedTimeZoneOffset]
VAR LocalNow = NOW()
RETURN
LocalNow + (OffsetHours / 24)
```

Figure 45 - Last Refresh

## 8. DCCP Monitoring Dashboard Mobile.

Imagine a scenario where a Team Lead, a Coordinator, or even a backup analyst experiences a computer failure or is during a software update. In that critical moment, they need to access vital information and make rapid decisions to keep operations running smoothly. This is where the idea of creating a mobile-responsive dashboard becomes particularly relevant.

By having a dashboard that is accessible from both computers and mobile devices, we ensure that these professionals can access data, monitor situations, and communicate effectively from anywhere, at any time. This flexibility not only enables them to stay operational during unexpected interruptions but also allows them to respond quickly to any situation that requires immediate attention.

Furthermore, this adaptation isn't limited to emergency situations. It facilitates regular review of critical information by leaders and analysts, even when they are out of the office or on the move. This not only enhances efficiency and responsiveness but also ensures that workflow is not hindered by the hardware or software limitations of a single computer.

### 8.1. DCCP Monitoring Dashboard by Analyst mobile.

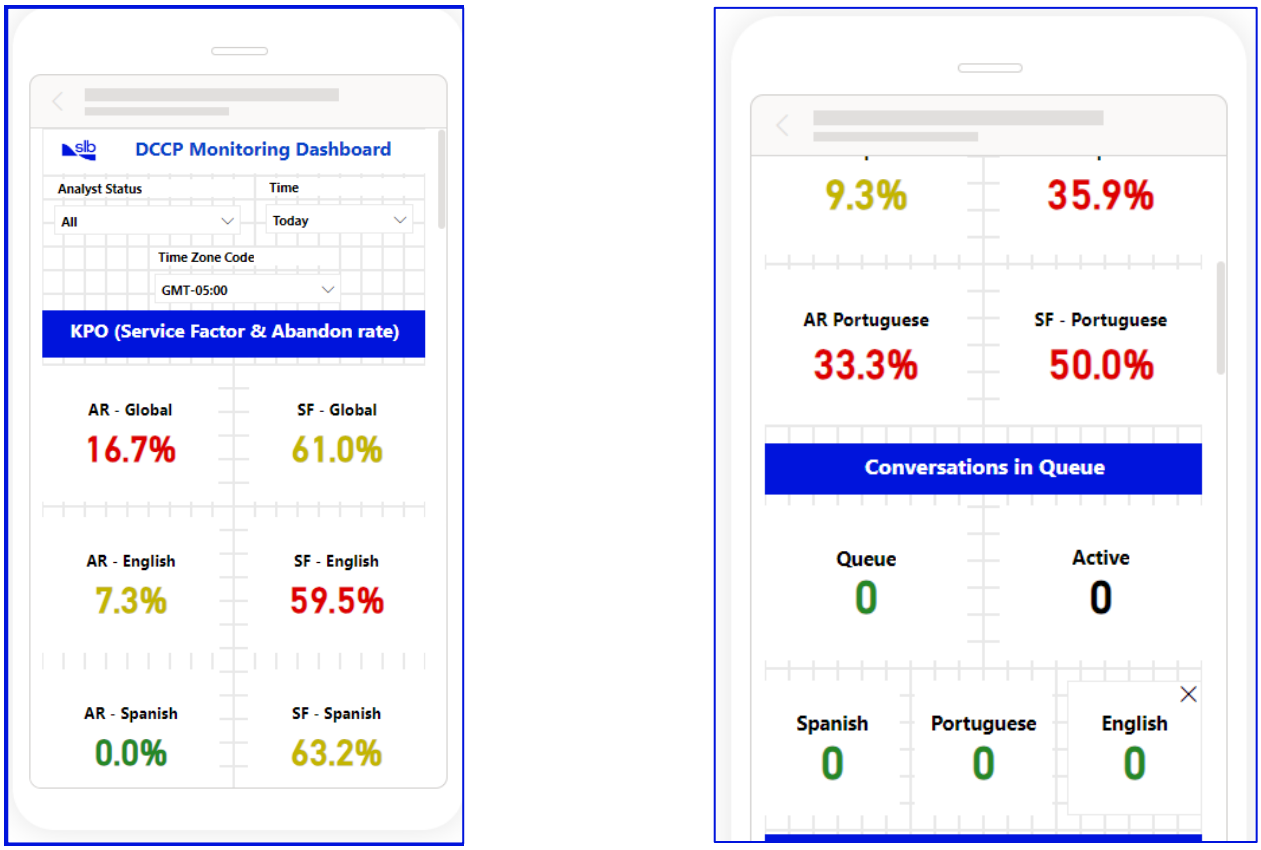


Figure 46 - KPO & Conversations in Queue mobile


Figure 47 - Analyst Status Mobile & Top ten calls taken mobile

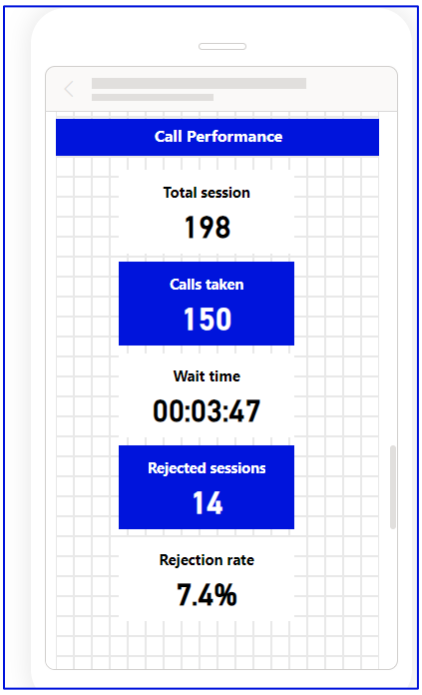


Figure 48 - Call Performance mobile

8.2. DCCP Monitoring Dashboard by Team Leads & Coordinators.

Unlike the previous images, the only thing that changes here are the filters that are used.

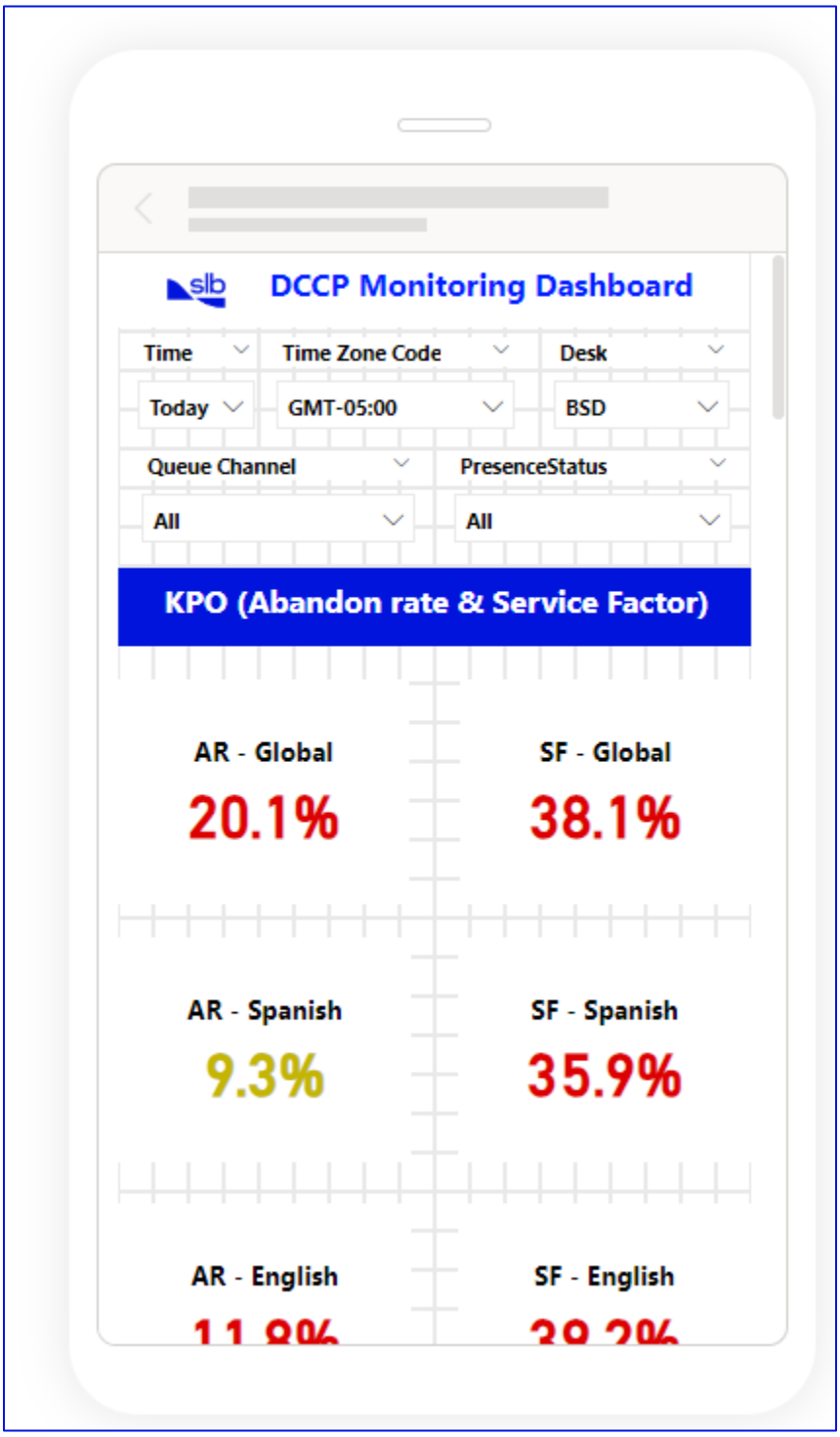


Figure 49 – Team Leads & Coordinators DCCP Monitoring Dashboard Mobile

## 9. Conclusions

In response to the operational needs of SLB's global contact center desks, we have developed a comprehensive Power BI report integrated with the Microsoft Digital Contact Center Platform (DCCP). This report aims to provide real-time insights into key metrics such as conversations in queue, service factors, abandonment rates, agent statuses, and overall call performance. By consolidating these essential metrics into a unified interface, team leads, coordinators, and analysts can quickly identify areas for improvement and make informed decisions to enhance the quality of customer service. In other words, the creation of this dashboard will enable:

1. *Enhanced Operational Efficiency*: The integration of real-time Power BI reports with the Microsoft Digital Contact Center Platform (DCCP) significantly enhances operational efficiency at SLB's global contact center desks. By providing instant insights into critical metrics like queue status, agent performance, and service factors, supervisors can swiftly identify bottlenecks and make timely adjustments to improve customer service quality.

2. *Improved Decision-Making:* The availability of historical and real-time data analytics empowers team leads, coordinators, and analysts to make data-driven decisions. They can analyze trends, identify operational inefficiencies, and optimize agent workload allocation in real-time, thereby ensuring effective management of incoming inquiries and minimizing customer wait times.

3. *Customizable and Accessible Reports*: The Power BI reports offer customizable visualizations and personalized views tailored to organizational roles. This flexibility allows different stakeholders to access relevant information according to their responsibilities, enhancing usability and ensuring focused decision-making.

4. *Focus on Customer Experience*: Metrics such as service factor, abandon rate, and queue status provide crucial insights into customer experience management. The ability to segment data by language and other parameters enables targeted improvements and ensures that customer service operations are aligned with specific customer needs and expectations.

5. *Mobile Accessibility*: The development of a mobile-responsive dashboard ensures operational continuity and responsiveness. Team leads, coordinators, and analysts can access critical data and make decisions on-the-go, ensuring that service levels remain high even during unexpected disruptions.

6. *Scalability and Adaptability:* The dashboard's design and features, including filters for time zones and service desks, demonstrate scalability across different operational scenarios and locations. This adaptability ensures that the dashboard remains effective as SLB's contact center operations evolve and expand.

The next step would be to create a dashboard specifically tailored for SLB Global's Service Desk, accommodating multiple languages and additional support groups such as TSD. This dashboard would aim to integrate insights and metrics relevant to each group's operational needs, enhancing efficiency and support capabilities across different language requirements and specialized service areas.