AT&T and CallTek Integration document

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Change Log:

Date	Author	Notes
04-Oct-2024	Sudheer Boggavarapu	Initial draft
08-Oct-2024	Sudheer Boggavarapu	Added integration areas, Org API, event mapping info
14-Oct-2024	Sudheer Boggavarapu	Updated Site and Device API with parameter maping
16-Oct-2024	Sudheer Boggavarapu	Updated Event API notes Added SNOW Case ebonding API Added initial phase work items
21-Oct-2024	Sudheer Boggavarapu	Minor updates

Introduction

CallTek is going to provide Tier-1, Tier-2 and Tier-3 support AT&T Community Wi-Fi venues. As part of this agreement, there is a need for systems integration between AT&T and CallTek to exchange Venue, Asset, Event and monitoring information. This document lists all the systems, event supported, monitored. It also lists different system integration and the purpose of integration.

Note: This is still in draft and is subject to a lot of changes as discussions progress

Systems/Applications

AT&T Systems

rXg (edge Gateway)

- Dell hardware with RGNet software installed at customer site. Provides gateway functionality

DPA

- A Central server capable of receiving events from gateway devices
- Supports receiving metrics from gateways
- Aggregates, enriches and creates events in SNOW or any other external system

Fleet Manager

- Currently installed in AT&T Data Center
- Runs RGNet software, and is configured as Fleet Manager
- Used to provide
    - WebUI access to admin portal on edge rXgs
    - Enable SSH proxy to edge rXgs
    - Operator portal access to property managers

Salesforce

- Stores Venue, Asset, Contacts etc.
- Integrates with Billing systems

Service Now

- Ticketing system
- Supports event management, alert parameters, SLA definition etc.

CallTek Systems:

Cosmos

- Monitoring System: monitors edge devices
- Support Organizations, Admin/Users, Sites, Events etc.

CAS

- Ticketing system
- Uses CTC API (e.g. CRUD for Property, Ticket information)

Environments:

Sandbox:

CallTek to deploy AT&T specific Cosmos and CAS system in CallTek Network

Production:

CallTek to deploy AT&T specific Cosmos and CAS system in CallTek Network

Systems Integration Requirements

AT&T and CallTek Systems/application to be integrated to exchange following information

1. Venue/Property information
    a. Venue Id, Venue Name etc.
    b. Address, Location (x/y)
    c. Number of rooms (if available)
    d. Venue Status (ready for day2, monitoring, in-service, decommit)
    e. When to sync?
        i. Only when ready for day-2
2. Venue Contacts
    a. Name, email, phone number of property managers/contacts
3. Venue Assets
    a. Details of hardware assets installed at site
        i. Device Name, Device Type
    b. AP, Switch, Controller, Gateways
        i. MAC, Serial No, IP Address, Hostname etc.
4. Venue Topology
    a. Topology of devices installed and connected at site
5. Events
    a. Events monitored on rXg. APs, Switches, Controllers

6. Metrics
    a. Metrics (also referred as KPIs occasionally) collected on rXg
    b. These metrics can be monitored and alerted based on thresholds
7. Dispatch
    a. Ability for CallTek to send notification to AT&T Dispatch team
    b. 2-way exchange. Schedule, confirm order, cancellation, re-schedule
8. HW Replacement
    a. Ability for CallTek to send HW replacement notifications to AT&T
    b. Feedback shipping/tracking information
9. Express ticket (circuits issues with ADI team)
    a. Ebonding with SNOW
    b. TBD: how event from SNOW is sent to ADI (current process??)
10. Light Portal to CAS Ticketing system
    a. Case ebonding from CallTek CAS to AT&T SNOW
    b. Ticket view for property managers
        i. With case ebonding implementation, this will be BAU
11. Escalation to Platform support team
    a. Ability for CallTek to escalate platform/system issue to L4 team
    b. 2-way ticket ebonding
12. System Access (Need review with AWSSEC team)
    a. CallTek to Access WebUI of rXg
        i. SSO to Fleet Manager
    b. CallTek to SSH to rXg
    c. AT&T Users to access Cosmos/CAS
        i. View Tickets, status, reports etc.
13. CallTek IdP access to AT&T FIT viewer (Future Idea)
    a. Process changes for Day-1 (internal to AT&T)
    b. Once process change, implement CallTek access to FIT using SSO

Monitoring events

AT&T Events Supported and ACW Enable Status

- Below are the events monitored on rXg to create Health notices
- These health notices are streamed from rXg -> DPA using webhooks as per protobuf specification
- DPA upon receiving these events, checks/enriches data and creates events in SNOW

No	Health Notice on rXg	AT&T Event Name	AT&T Severity	Device Type	ACW Supported	CallTek Supported	CallTek Event Name (TBD)
1	Memory Utilization (%)	HIGH_MEMORY_UTILIZATION	Sev 3	Gateway	Yes	Yes	1022
2	Load Average	HIGH_CPU_UTILIZATION	Sev 3	Gateway	Yes	Yes	1023
3	Filesystem Utilization Threshold	DISK_SPACE_LOW	Sev 3	Gateway	Yes	Yes	1024
4	Speed Test Failed	SPEED_TEST_FAILURE	Sev 4	Gateway	No	No	1025
5	Ping Target Monitor	CIRCUIT_HIGH_PACKET_LOSS	Sev 3	Gateway	Yes	No	1026
6	Link Quality Jitter Ping Targets	CIRCUIT_HIGH_JITTER	Sev 3	Gateway	Yes	No	1027
7	Ping Target Monitor	CIRCUIT_HIGH_LATENCY	Sev 3	Gateway	Yes	No	1028
8	Portal Sync Failure	WEB_PAGE_SYNC_FAIL	Sev 3	Gateway	Yes	No	1029
9	License Expiration Issue (Note: Support License)	RXG_LICENSE_EXPIRING	Sev 3	Gateway	No	No	1030
10	Uplink Monitor	CIRCUIT_STATUS	Sev 3	Gateway	Yes	Yes	1031
11	Login Sessions Limit (%)	HIGH_SESSION_USAGE_LIMIT	Sev 2	Gateway	Yes	Yes	1032
12	DHCP Shared Network Utilization [blocks larger than /X] (%)	DHCP_LOW_LEASE	Sev 3	Gateway	Yes	Yes	1033
13	Monitor Infrastructure Access Point	DEVICE_STATUS	Sev 3	AP	Yes	Yes	1034
14	Infrastructure Device Monitor	DEVICE_STATUS	Sev 2	Switch	Yes	Yes	1035
15	Infrastructure Device Monitor	DEVICE_STATUS	Sev 3	WLC	Yes	Yes	1036
16	DEVICE_STATUS(SMT)	DEVICE_STATUS	Sev 1	Gateway	Yes	Yes	1037
17	Backend Daemon Not Responding	DAEMON_CHECK_RESTART	Sev 3	Gateway	Yes	No	1038
18	Config Template Download Failure	CONFIG_DOWNLOAD_FAILURE	Sev 4	Gateway	Yes	No	1039
19	Ping Target Monitor	ICMP_REACHABILITY	Sev 2	Gateway	No	No	1040

20	CPU Core Temperature (°C)	SENSOR_TRIGGERED	Sev 3	Gateway	No	Yes	1041
21	Binat Pool Utilization	HIGH_BINAT_UTILIZATION	Sev 3	Gateway	No	Yes	1042
22	Fleet Node X(Fleet Id of the Node)	FLEET_NODE_STATUS	Sev 1	Gateway	Yes	No	1043

Additional events monitored by CallTek

Note: These events will be supported by DPA in future with changes on rXg, DPA.

On AP and Switch:

CallTek uses SNMP to check data points from AP and Switch using a localized virtual service node installed on rXg.

Design:

- Virtual Node installed on rXg
- Collects data from local Controller using SNMP or Webhook
- Cosmos fetches data from local virtual node every 15mins for monitoring and alerting

Events List:

No	Event	Device Type	Severity	Notes
1	CPU Utilization	Switch	1 (>85%) 3 (>70%)	
2	Memory Utilization	Switch	1 (>85%) 3 (>70%)	
3	Temperature	Switch	1 (>55%) 3 (>45%)	
4	Port Utilization	Switch	1 (>80% of bandwidth utilization) 1 (if errors or drop > 1%)	
5	PoE Power Utilization	Switch	1 (>85%) 3 (>70%)	
6	Config changes on device	Switch		
7	VLAN/STP topology changes	Switch	2 (> 5 changes in one minute)	
8	Config changes on device	Switch	2	
9	Config changes on device	AP	2	
10	MCS index	AP	1 (<4) 3 (between 4-6)	
11	Client Load	AP	1 (>80%of AP capacity)	
12	RSSI	AP	3 (<-70dBm)	
13	SNR	AP	1 (<20dB)	
14	AP Uplink Utilization	AP	1 (>80%)	

15	UPS Power Supply failure	UPS	1 (charge drops below 20% or runtime < 15min) 1 (Temp > 40°C) 3 (Temp > 30°C)	

On Gateway:

Design:

- Cosmos collects data from rXg using webhook every 15mins for monitoring and alerting

Events List:

No	Event	Device Type	Severity	Notes
1	accounts_limit	Gateway	1 (>95%) 3 (>85%)	
2	cin_speed	Gateway	1 (<1000Mb/s) 3 (<999Mb/s)	
3	fleet_nodes_limit	Fleet Manager	1 (>95%) 3 (>85%)	
4	states_limit	Gateway	1 (>95%) 3 (>85%)	
5	Network interface packet errors	Gateway	1 (>3%) 3 (>1%)	

Note: These events will be supported by DPA in future with changes on rXg, DPA.

Systems Access

For CallTek Users:

1. Admin Portal UI access for each rXg and Controllers at site
2. SSH access to each AP, Switch and Controllers at site
3. Access to FIT Viewer

For AT&T Users:

1. Access to Cosmos to check tickets, status, Reports etc

For Property Managers:

1. Access to view tickets (via AT&T Light Portal)
2. With ebonding this is BAU

Design

Cosmos:

- A new Cosmos instance will be setup for AT&T use
    - Sandbox: In CallTek network
    - Production: In CallTek network
- Can create any number of users for AT&T internal users
    - To access dashboards, reports etc.
- Need to explore if this can be enabled with AT&T IdP (using SAML)
- API Account to be created for SFDC and DPA to invoke API calls

Cosmos Modules used for AT&T sync

The list of Cosmos modules used for syncing Salesforce data

Module	Modules used for Salesforce sync
Organization module	Used to sync Corp Account name
Admin Users List	Not used
Site Module	Used to sync Site Account details
Device Profiles	Default device profile created and used for all devices. Not used as of now.
Devices Module	Used to sync Asset details from Salesforce
Events module	Used to open/close events from DPA to Cosmos

Open items:

1. Approach to sync site contacts
2. Cosmos Sandbox, CAS Sandbox

Cosmos APIs for AT&T use

Login API

a. No need to use the Login API
b. An Admin who has access to Cosmos can access the API Key to provision on the calling application (e.g. SFDC, DPA)

Organization APIs

A Corporate account in SFDC is mapped as an Organization in Cosmos. Additional field mapping is as below

c. Venues, Accounts, Assets, Contacts mapping

AT&T Salesforce	Cosmos
Corp Account	Organization
Venue	Site
Asset	Device

- A new corporate account in SFDC that has 'Venue Product Offering = ACC' should invoke 'Create Organization' API call to Cosmos
- New fields in SFDC Account Record
    - CallTek Org Sync status
        - Values: "Not Applicable", "To be Synced", "Synced", "Deleted", "Not Applicable". "To be Updated", "Updated"
        - Default: "Not Applicable"
        - When a new corporate account with 'Venue Product Offering=ACC' is created, set to 'To be Synced"
        - When 'Create Organization' is successful set to 'Synced'
        - When 'Delete Organization' is successful set to 'Deleted'
        - Use 'To be Updated" when there are any changes to Corp Name or any other sync fields.
        - Use 'Update Organization' for any updates and if success set 'Updated'
    - CallTek Org ID
        - Type: Integer
        - Stores value of org id returned from 'Create Organization' call

- API Details:
- Create Organization:
    - Call : {host}/organizations/admin/store
    - Method : POST
    - Parameters : $key, $org_name,
    - Return Value :
        - On success, it return json format containing the organization data.
        - On failure, it returns an error message
    - Input

SFDC Param Reference	Cosmos Parameter Name	Data Type	Notes
	key	String	API Key stored in calling application (e.g. SFDC)

Corporate Account Name	org_name	String	

- Response

SFDC Param Reference	Cosmos Parameter Name	Data Type	Notes
CallTek Org ID	org_id	int	Store the CallTek Org ID in SFDC for subsequent API calls
	org_key	string	Ignore this field

- Delete Organization
  - Call : {host}/organizations/admin/delete
  - Method : POST
  - Parameters : $key, $org_id, $user_email
  - Description : Delete an organization. This action cannot be reverted!
  - Return Value :
    - On success, it returns json format containing the result data and HTML code 200.
    - On failure, it returns an error message
  - Input

SFDC Param Reference	Cosmos Parameter Name	Data Type	Notes
	key	String	API Key stored in calling application (e.g. SFDC)
CallTek Org ID	org_id	int	
Any system email	user_email	string	**Not mandatory**

  - Response

SFDC Param Reference	Cosmos Parameter Name	Data Type	Notes
	Status	String	
	message	String	

Site APIs

An ACW ‘Venue record’ in SFDC should be mapped as a ‘Site’ to Cosmos.

New fields in SFDC

- CallTek Site ID (On Venue Object)
  - Type: Integer
  - Stores value of site id returned from 'Create Site' call
- CallTek Site Sync status
  - Values: "Not Applicable", "To be Synced", "Synced", "Deleted", "Not Applicable". "To be Updated", "Updated"
  - Default: "Not Applicable"
  - When a new Site account under a Corp Account with 'Venue Product Offering=ACC' is created, set to 'To be Synced"
  - When 'Create Site is successful set to 'Synced'
  - When 'Delete Site is successful set to 'Deleted'
  - Use 'To be Updated" when there are any changes to Site Name or any other sync fields.
  - Use 'Update Site for any updates and if success set 'Updated'

The SFDC API account should be an 'admin' for every organization for the account to add sites to any organization. All API calls from SFDC will use /admin API calls.

API Details

- Create Site
  - Call : {host}/sites/admin/store
  - Method : POST
  - Parameters : $key,$org_id, $site_id, $site_name, $site_oid, $site_state, $site_zip, $site_city, $site_address, $site_phone, $site_brand_code, site_$communitystring, $site_code1, $site_code2
  - Description : Creates/edits a site. Admin/Orgadmins can only create sites for organizations they are associated with.
  - Return Value : On success, it returns json format containing the site id and HTML code 200 On failure it returns an error message.
  - Input:

SFDC Param Reference	Cosmos Parameter Name	Data Type	Notes
	key	String	API Key stored in calling application (e.g. SFDC)
CallTek Org Id	org_id	int	
Venue Name	site_name	string	
Venue ID	Site_oid	String	CallTek to store this for reference

			later during Ebonding
Venue State	Site_state	String	
Venue Zip	Site_zip	String	
Venue City	Site_city	String	
Venue Street	Site_address	String	
Venue Phone	Site_phone	String	
Site Account ID	site_code1	string	Storing Site Account ID from SFDC. To discuss if this causes any issues on CallTek
Corp Account ID	site_code2	string	Storing Corp Account ID from SFDC. To discuss if this causes any issues on CallTek

- Response

SFDC Param Reference	Cosmos Parameter Name	Data Type	Notes

- Delete Site
  - TBD, but will be mostly using CallTek Site ID

Device Profile API (not needed)

It needed not be unique fo each device type, as Cosmos is not directly interfacing with rXg as of now. As per the discussions, a default device profile will be created and used for all devices.

Devices API

An ACW 'Asset' in SFDC should be mapped as a 'Device' to Cosmos.

New fields in SFDC

d. CallTek Device ID (On Asset Object)
   i. Type: Integer
   ii. Stores value of device id returned from 'Create device' call

e. CallTek Asset Sync status
    i. Values: “Not Applicable”, “To be Synced”, “Synced”, “Deleted”, “Not Applicable”. “To be Updated”, “Updated”
    ii. Default: “Not Applicable”
    iii. When a new Asset is created under a Site Account with ‘Venue Product Offering’ = ACC is created, set to ‘To be Synced”
    iv. When ‘Create Device is successful set to ‘Synced’
    v. When ‘Delete Device is successful set to ‘Deleted’
    vi. Use ‘To be Updated” when there are any changes to Device Name or any other sync fields.
    vii. Use ‘Update Device for any updates and if success set ‘Updated’

API Details

- Create Device
    f. Call : {host}/devices/store
    g. Method : POST
    h. Parameters : see table below
    i. Description : Creates/edits a device.
    j. Return Value :
        i. On success, it returns json format containing the device id and HTML code 200
        ii. On failure it returns an error message.
    k. Input:

SFDC Param Reference	Cosmos Parameter Name	Data Type	Notes
	key	String	API Key stored in calling application (e.g. SFDC)
CallTek Org Id	org_id	int	
CallTek Site ID	Site_id	Int	
AssetId18digit	Device_oid	String	CallTek to store this for reference later during Ebonding
Device Name (from asset)	Device_name	String	
LAN MAC Address	Device_mac	String	
Asset Management IP	Device_ip	String	
SNMP Port number	Device_port	Int	
	Device_polling_type	int	Default to ‘0’

	Devprofile_id	int	Default to constant value: 1
	Ctdhost_id	int	Default to constant value. 0
Asset Type	Device_type	string	Map as below The device type like : 1. Unspecified 2. Gateway 3. Server 4. AP 5. Switch 6. Wireless Controller 7. Other Should this be 'int' or 'string'. Document has two entries for device_type

l. Response

SFDC Param Reference	Cosmos Parameter Name	Data Type	Notes
	Status	String	
	message	String	
CallTek Device ID	Device_id	Json array	Extract device_id and store in SFDC

- Delete Device
  m. Call : {host}/devices/delete
  n. Method : POST
  o. Parameters : $key, $device_id
  p. Description : Delete a device with all historical data belonging to it. This action is irreversible
  q. Input:

SFDC Param Reference	Cosmos Parameter Name	Data Type	Notes
	key	String	API Key stored in calling application (e.g. SFDC)
CallTek Device ID	Device_id	int	

r. Output:

SFDC Param Reference	Cosmos Parameter Name	Data Type	Notes
	Status	String	

	message	String	

Events API

Events API to be used by DPA to notify open and close event to Cosmos

- Open Event
  - Call : {host}/cosmos/events/store
  - Method : POST
  - Input:

SFDC Param Reference	Cosmos Parameter Name	Data Type	Notes
	key	String	API Key stored in calling application (e.g. DPA)
CallTek Device ID (from Asset record)	device_id	int	
Event ID form event mapping table	Event_type_id	int	Refer event mapping table from Monitoring events section
ATT Event NAme	data	string	(att_event_name:HIGH_CPU_UTILIZATION} CallTek to store this reference to be sent later for Case ebonding
	status	int	1 (Raised) This is considered as 'open' event

  - Output
    - Output sends device_event_id
    - Currently there is no need to store this on DPA, as close event sends device_id, event_type_id, and status

- Close Event
  - Call : {host}/cosmos/events/store
  - Method : POST
  - Input:

SFDC Param Reference	Cosmos Parameter Name	Data Type	Notes
	key	String	API Key stored in calling application (e.g. DPA)
CallTek Device ID (from Asset record)	device_id	int	
Event ID form event mapping table	Event_type_id	int	Refer event mapping table from Monitoring events section
ATT Event Name	data	string	(att_event_name:HIGH_CPU_UTILIZATION} CallTek to store this reference to be sent later for Case ebonding
	status	int	6 (Closed) This is considered as 'close' event

- Output
  - Output sends device_event_id
  - Currently there is no need to store this on DPA, as close event sends device_id, event_type_id, and status

rXg and DPA enhancements (future):

To support additional AP and Switch monitoring to get parity with CallTek monitoring,

1. Script changes are need to on rXg to perform SNMP monitoring (for listed data) and create Health notice as needed
2. DPA to support new events
3. Certain AP events (e.g. MCS, SNR, RSSI) are based on metrics already being collected as part of KPI support. These could be used to monitor and support new events
   a. rXg to monitor these KPIs every 15mins and create health notice
   b. ***Note: To perform Metric based monitoring, telemetry should be enabled on all ACW properties.***

Notes: These requirements will be handled in future releases.

HW replacement

Asset replacement may be required when a device installed at site is faulty. This could be an AP, Switch, Controller or Gateway etc.

AT&T Salesforce has APIs (through WSP interface) to initiate hardware replacement. CallTek CAS could use these APIs to initiate HW replacements. A device replacement request to SFDC will follow the usual approach to provision and ship the device through CTDI

Approach:

- CAS to initiate HW replacement API to SFDC
- SFDC will trigger the BAU flow for replacement
- CAS can use asset lookup queries to get tracking information
- API available to check the SFDC case status on the replacement

API Calls: (Pending from AT&T)

POST /awss-services/rest/assetmanagement/v1/replaceasset/request

e.g. Payload <<TBD checking payload>>

```
{
  "currentAssetSfdcId": "02iDb00000BfEvBIAV", (Available to CallTek from Devices:Device_oid
  "replacementModel": "  B-MR33-C  “
  "isHoldForInstall": true,
  "isRSL": true,
  "shippingPriority": "4-Ground",
  "isForMeetingSpace": true,
  "isSpare": false
}
```

CallTek CAS – AT&T ServiceNow Ebonding

- A ticket in CallTek CAS system should be created as a case in AT&T Service Now (AT&T SNOW)
- An update to the Case notes in AT&T Service Now should be updated as notes in CallTek Ticket
- CallTek Ticket status changes (e.g. New/Open, closed etc.) should be reflected in AT&T SNOW

API - Outbound from CAS, Inbound APIs to AT&T Service Now Case

Create:
Call: <Service-now-hostname>/api/now/import**/<tbd>**
Method: POST
Input:

AT&T Salesforce reference	CallTek Cosmos/CAS reference	AT&T ServiceNow Parameter Name	Data Type	Mandatory	Notes
		u_start_time	GMT time	Yes	e.g. 2024-10-10 16:54:03
		u_external_ticket_number	int	Yes	Ticket number in CallTek CAS
		u_att_ticket_number	String	Create: No Update: Yes	**During create:** Empty During **Update/Close:** Send the ticket number received during create
Venue ID	site_oid	u_customer_location_id	String	Yes	The site_oid value set in Cosmos
Asset ID (18char)	device_oid	u_asset_id	String	Monitored: Yes Customer Calls: Optional	The device_oid set in Cosmos
		u_short_description	String	Yes	e.g. "AP is offline"
		u_description	String	No	
		u_severity	String	Yes	Sev-1, Sev-2, Sev-3, Sev-4 (Sev-1 is highest severity)
		u_state	String	Yes Create: New Update: Open Close: Resolved Cancelled: Cancelled	Supported: 'New, Open, Cancelled, Resolved, Closed'
		u_comments	String	No	
		u_category	String	No	Defaulted to 'Misc'
		u_subcategory	String	No	Defaulted to 'Non-Categorized'
		u_ownership	String	No	Set to 'Client'
		u_channel	String	Yes	{Web, Phone, Email, Alert} Set to 'Alert' if the event is from DPA

	Cosmos event record: data field: att_event_name	u_alarm_type	String	Yes (when u_channel='Alert') Optional (otherwise)	Extract from Cosmos event API: data filed: att_event_name e.g. "DEVICE_STATUS
		u_resource_id	String	No	Optional field e.g. eth0, eth1
		u_alarm_class	String	Yes (when u_channel='Alert') Optional (otherwise)	Set to 'RGNET;
		u_alarm_device	String	Yes (when u_channel='Alert') Optional (otherwise)	Set to one of these {AP, GATEWAY, SWITCH, WLC, GENERIC} Will be expanded to include ONT, OLT in future
		U_resolution_notes	String	Yes	Add notes when the 'state' is set as Closed, Resolved, Cancelled

Sample Payload

```
Create:
{
 *"u_start_time": "2024-10-10 16:54:03", // Issue start time in GMT time. Will be set in the BNS SNOW case field
'opened_at'.
 *"u_external_ticket_number": "12345",  // CallTek ticket number
 "u_att_ticket_number": "CS1661396",   // AT&T BNS Ticket number set only when msg is an update and not a create.
 *"u_customer_location_id": "a030z00000kf6Y2AAI",   // SFDC Venue ID (18-char)  (Mandatory)
 "u_asset_id": "02i0z00000WBLJAAA5",  // SFDC 18-char asset id
 *"u_short_description": "Wi-Fi inoperable on device",
 "u_description": "Wi-Fi inoperable on device and guests unable to connect due to errror ...",
 *"u_priority": "Sev-2",  // Sev-1, Sev-2, Sev-3, Sev-4  (Sev-1 is highest severity)
 "u_state": "New",     // One of 'New, Open, Pending, Requeued, Cancelled, Resolved, Closed'.
                  Support only 'New, Open, Cancelled, Resolved, Closed' from them.
 "u_comments": "....",
 "u_category": "",     //  *???? Not sure how we will support cat and subcat???  For other ebondings,
 "u_subcategory": "",   //  we hard-code to use 'Assistance/Health Check'. Sudheer said to hard-code to some set. TBD.
 "u_resolution_notes": "AP ethernet cable was broken.  problem fixed.",  // Only set when u_state is 'Resolved' or
'Closed'
 "u_ownership": "",     // {att-bns | client}
 "u_contact_type": "",  // {web, phone, email, monitoring, eBonding}  ***TODO: If we use monitoring(Alert), we
                  will need the metric type(u_x_cat_id), u_resource_id,
                                    u_alarm_class, u_alarm_device too.  Bring this up with Enrico.
 *"u_alarm_type": "",  // Metric name from u_x_cat_id comes from event's 'metric_name' field from DPA.
 "u_resource_id": ""  // This contains the eth0 or eth1 specific to the event that comes from event's 'resource' field
```

```
from DPA.
  "u_alarm_class": ""   // DPA's event from DPA's event's 'event_class' field {Hard coded to RGNET}
  "u_alarm_device": ""    // {AP, GATEWAY, SWITCH, WLC, GENERIC} from DPA's event 'type' field.
}
```

API - Outbound from AT& SNOW and inbound to CallTek CAS

This APIs are need for case notes updates in SNOW. If a Light portal user (e.g. property manager) adds any notes to any of the open cases, the updates are recorded in AT&T ServiceNow. These updates should be sent to CallTek CAS system.

Method Name : CTCUpdateTicketByTicketId
Parameters : $vendor_id, $client_key, $ticket_id, $ticket_status, $notes
Description : This method is used to update ticket.
Return Value : On success it returns the newly created ticket id, on failure it returns an error message.

There is a challenge to use CTCUpdateTicketByTicketId, as AT&T SNOW only as CAS Ticket ID. It has AT&T references (e.g. site-oid, device-oid), but not org_id, site_id. Need an API to just send notes to CAS ticket system using just the CAS ticket ID (This Ticket ID is obtained as part of initiate case ebonding)

<notes from CallTek> AT&T can use the same API just with TicketID. Will test once we get a CAS endpoint for lab.

High level work-Items

Phase-1/POC/MVP:

CallTek:

1. Setup production Cosmos System for AT&T use
    a. Create admin account for ‘SFDC app’ and ‘DPA app’
    b. Create admin account for AT&T user
        i. This user can create subsequent users
2. Setup production CAS System for AT&T use
    a. Create account to use for Ticket update APIs (from ATT SNOW to CAS)
3. Ensure following fields are synced from Cosmos to CAS. These are needed during Case ebonding from CallTek CAS to AT&T SNOW
    a. site_oid (sent to Cosmos as part of Site Create)
        i. to be used in ‘u_customer_location_id’ during case ebonding
    b. site_code1 (sent to Cosmos as part of Site Create)
    c. site_code2 (sent to Cosmos as part of Site Create)
    d. device_oid (sent to Cosmos as part of Device Create)

        i. to be used in ‘u_asset_id’ during case ebonding
    e. att_event_name (sent to Cosmos as part of Event Create in data field)
        i. to be used in ‘u_alarm_type’ during case ebonding
4. Provide IP address blocks to add ACLs to rXg
    a. This is needed to allow access to CallTek user to login to rXg
5. Development to invoke AT&T SNOW Ebonding to use Create/Update Case API
6. Provide an API for AT&T SNOW use to sync case notes

AT&T:

1. Identify sites for Phase-1/POC/MVP
2. Create Organization, Sites on Cosmos (Manual)
3. Create Devices using a standalone script
    a. Export Assets for identified sites from SFDC
    b. CallTek to share the CSV file format to import assets as devices into Cosmos
4. DPA development to use Event API
    a. Maintain site-ids for PoC sites
    b. Use devices/getList (with site-id)
    c. Use device-id to create events in Cosmos
    d. Do not create events in AT&T SNOW for sites identified
5. SNOW development to use CAS Ticket update API for case updates
6. rXg Updates (only on identified sites):
    a. Create local accounts on rXg identified
    b. Create ACLs on rXg to allow CallTek users
    c. Change support number in rXg Custom data set
    d. Create new ‘admin role’ on Fleet Manager and rXgs
    e.g. ‘CallTek Support’
7. Provide SNOW endpoints for both sandbox and production to CallTek Team
    a. Provision API user and credentials

Environments

Lab Environments

1. RGNets
    a. rXg installed in CallTek labs (vgw1-01-ctclab.cosmos.us.com)
    b. rXg installed in AT&T labs (TBD)
2. AT&T
    a. DPA (TBD)
    b. ServiceNow (attwifidev.service-now.com)
3. CallTek
    a. Cosmos (cosmos2.profivps.hu)
    b. CAS (TBD)

Note: both the rXg labs will be provisioned in Dev SFDC, Dev Fleet Manager

Production Environments

1. AT&T
    a. DPA (dpa-gs.wayport.net)
    b. ServiceNow (attwifi.service-now.com)
2. CallTek
    a. Cosmos (TBD)
    b. CAS (TBD)

Scale (in-progress)

List of work items to implement changes to support all ACW sites

AT&T:

1. SFDC dev
    a. Support new fields in Account, Venue, Asset objects
    b. Use Cosmos API to sync
        i. Corp Account – Organization
        ii. Venue – Sites
        iii. Asset – Devices
2. DPA development to support event streaming from all sites to Cosmos