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HS IoT Platform POS Integration Specifications

Overview:
This document describes the scope of the integration from a Point-of-Sale (POS) to HotSchedules IoT Platform (also known as 'Platform' and formerly known as 'Bodhi'). For developers looking to create a POS Integration Agent Application, this document describes the data types for data imported from the POS to Platform, and from the Platform to HotSchedules.

POS Integration Agent Application:
The Agent provides a single integration point that enables in-store and near-store data collection. The Agent allows a real time bi-directional interface between the HS IoT Platform / Cloud and target POS.

The Agent Application interfaces with the Target POS system and transfers POS data to the HS IoT Platform Cloud. The Agent application can integrate with the POS via many different types of interfaces - database, XML, and/or API. The Agent App can be configured to transfer data, watch files. The Agent can also be designed to run at specific frequencies (e.g., every 30 min)

Definition of Integration:
This documentation is intended for developers looking to integrate the HS Platform with the purpose of building a bi-directional integration into their point of sale systems, and be stored and accessed from HS Platform Cloud.

Scope:
IN SCOPE:

- Agent to get data from POS into the HS platform (MongoDb)
- Job(s) to convert raw data from Mongo to canonical types (tables)

OUT OF SCOPE (FOR MCDONALDS CUSTOM POS INTEGRATION PROJECT): TABLE 3 and TABLE 4

HotSchedules Platform Data Types for conversion of raw data that is transferred from POS

Table 1: Common Data Types across all Applications that will consume data from HotSchedules Platform (based on POS data)

Type	Property	Property Type	Business Description	Mandatory	Notes

BodhiCurrency	code	Enumerated:BodhiISOCurrency.name		yes	
BodhiCurrency	value	Integer		yes	scaled integer value representing the currency amount (ex. $5.50 = 550 at scale 2)
BodhiCurrency	scale	Integer			
InStoreReference	id	String		yes	
InStoreReference	name	String			
DatePeriod	from	DateTime		yes	
DatePeriod	to	DateTime			
KeyValuePair	key	String		yes	
KeyValuePair	value	String			
PersonName	family_name	String		yes	
PersonName	given_name	String			
PersonName	middle_name	String			
PersonName	honorific_prefix	String			
PersonName	honorific_suffix	String			
PersonName	formatted	String			

	_name				
PostalAddress	type	String			
PostalAddress	street_address	String			
PostalAddress	extended_address	String			
PostalAddress	locality	String			
PostalAddress	region	String			
PostalAddress	postal_code	String			
PostalAddress	country	Enumerated:CoundtryType.code			

Table 2a: Data Types For Business Intelligence Applications

Summary Data Types:

- Sales Transaction
- Time Card
- Sales Item
- TBD - How often the agent pulls data from data source

Canonical Type	**SalesTransaction**
Integration frequency	30 minutes or less (TBC)
Detail Level	Transaction
Transaction Types	Sales

Canonical Type	**Timecard**
Integration frequency	30 minutes or less (TBC)
Detail Level	Time punch event
Transaction Types	Time punch

Canonical Type	SalesItem
Integration frequency	30 minutes or less (TBC)
Detail Level	Transaction Sales Items
Transaction Types	Sales

Table 2b: Detailed Table of Data Types

Type	Property	Business Description	Mandatory for Integration	Integration Notes
SalesTransaction	store_id (string)	Id for the store at which the transaction occurred	YES	
SalesTransaction	timestamp (date-time)	POS Timestamp of the transaction. The time the order was tendered. Recorded in UTC time.	YES	
SalesTransaction	business_day (string, optional)	Business Day that the transaction applies to	YES	
SalesTransaction	order_id (string, optional)	The POS identifier of the transaction, The internal POS ID		
SalesTransaction	order_number (integer, optional)	The POS order number of the transaction. The printed receipt number	YES	
SalesTransaction	order_opened_at (date-time, optional),	The time the order was started. Recorded in UTC time.	YES	
SalesTransaction	order_closed_at (date-time, optional)	The time the transaction was closed. Recorded in UTC local time.	YES	
SalesTransaction	canceled_closed (boolean, optional)	True if the order has been cancelled. Otherwise False	YES	Must be True if the order was cancelled

SalesTransaction	voided_closed (boolean, optional),	True if the order has been Voided. Otherwise False	YES	Must be True if the order was Voided
SalesTransaction	training (boolean, optional),	True if this is a traning transaction. Otherwise False	1H 2016	
SalesTransaction	employee (InStoreReference, optional),	The employee who rang up the transaction	1H 2016	
SalesTransaction	service_type	This describes how the order is taken. Possible values are (but not limited to) - Phone - Counter - Drive through - Internet - Mobile - Kiosk	1H 2016	
SalesTransaction	delivery_type	This describes how the order is delivered to the customer. Possible values are (but not limited to) - Eat in - Carry out - Drive through - Delivery	1H 2016	
SalesTransaction	department (InStoreReference, optional),			
SalesTransaction	revenue_center (InStoreReference, optional),	Revenue Center - the part of the restaurant that is attributed with making the money. It could be the bar, main dining, patio, drive through etc. It could also be room service (in a hotel) etc.		
SalesTransaction	customer (InStoreReference, optional),	The customer/s that this transaction applies to		

SalesTransaction	table (InStoreReference, optional),	The tables/s being served by this transaction		
SalesTransaction	type (InStoreReference, optional),	To capture the type of Transaction - sale: {Cash, credit or advance payment}, void, refund Cash sales: Cash is collected when the business makes the sale and delivers the product and/or service to the customer. Credit sales: Cash isn't collected until sometime after the sale is made; the customer is given a period of time before it has to pay the business. Advance payment sales: The customer pays the business before the sale is consummated, that is, before the business delivers the product and/or service to the customer.		
SalesTransaction	point_of_sale_brand (string, optional),	The brand of the POS where the transaction was executed		
SalesTransaction	point_of_sale (InStoreReference, optional),	A reference to the POS terminal/s used to ring up the transaction		
SalesTransaction	external_ids (Array[KeyValuePair], optional),	Used as an identifier to any external system that needs to link to the transaction. For example the data could be used by the POS and by a loyalty system. The POS key is used as the source key. It could be used as a unique reference in Bodhi - or we could create our own unique key (most likely as the		

		source key does not seem to enforce uniqness) The Loyalty system might provide a key to a loyalty customer that can be used as a look up to associate this transaction to the customer's activity.		
SalesTransaction	guest_count (Real, optional),	The number of customers being served by this transaction	YES	
SalesTransaction	car_count (Real, optional),	The number of cars being served by this transaction		
SalesTransaction	modified (boolean, optional),	If this is a modification of an original transaction. This means that there will be two transactions in Bodhi - we don't update the original transaction. We store the orginal and the modifed.		
SalesTransaction	currency_code (object, optional) = [''],	The ISO standard definition of a currency code. This is managed by the job engine app transcoding POS data into the canonical form.		
SalesTransaction	currency_scale (integer, optional),	Required because we store all numerical values as integers. In the case of currency, the scale will be 2 - as in 'apply two decimal places to the data returned'		
SalesTransaction	gross_total (BodhiCurrency, optional),	The total value of the transaction before deducting tax and discounts	YES	
SalesTransaction	tax_total (BodhiCurrency, optional),	The total tax value of the transaction.	YES	
SalesTransaction	discount_total (BodhiCurrency, optional),	The total value of discounts applied to the transaction.	YES	

SalesTransaction	net_total (BodhiCurrency, optional),	The total value of the transaction that the customer is required to pay after deducting tax and discounts	YES	
SalesTransaction	tax_details (Array[SalesAmount], optional),	A list of each tax item that makes up the tax total (a list of varying tax types)	1H 2016	
SalesTransaction	discount_details (Array[SalesAmount], optional),	A list of each discount applied to the transaction.	1H 2016	
SalesTransaction	tender_total (BodhiCurrency),	The total value tendered by the customer	YES	
SalesTransaction	gratuity_total (BodhiCurrency, optional),	The total gratuity left by the customer		
SalesTransaction	change_total (BodhiCurrency, optional),	The total change given to the customer		
SalesTransaction	tender_details (Array[SalesAmount], optional),	A list of each tender item that makes up the tender total	1H 2016	
SalesTransaction	change_details (Array[SalesAmount], optional),	A list of each change item that makes up the change total	1H 2016	
SalesTransaction	tax_id (string, optional),	Link to the specific type of tax applied before promotions. Varies by type (sales, tourist, transient occupancy tax, state) and type (Sales,VAT,GST,PST,HST,Excise)		
SalesTransaction	tax_exempt (boolean, optional),	True if the entire sales transaction is exempt from tax. Otherwise False.		
SalesTransaction	tax_index (integer, optional),			

SalesTransaction	auto_tendered (boolean, optional),			
SalesTransaction	discounted (boolean, optional),	True if the entire transaction is discounted. Otherwise False.		
SalesTransaction	item_count (integer, optional),	The number of menu items included in the transaction	YES	
SalesItem	store_id (string),	Id for the store at which the transaction occured	YES	
SalesItem	timestamp (date-time),	POS Timestamp of the transaction. The time the order was tendered. Recorded in UTC time.	YES	
SalesItem	business_day (string, optional),	Business Day that the transaction applies to	YES	
SalesItem	order_id (string, optional),	The POS identifier of the transaction	YES	
SalesItem	order_number (integer, optional),	The POS order number of the transaction	YES	
SalesItem	transaction_id (string),	Transaction ID is a reference to the Parent transaction. All salesitems should be able to reference the parent sales transaction using this ID		
SalesItem	line_number	The sales item line number on the transaction	1H 2016	Does not yet exist
SalesItem	description (string, optional),	A description of the sales item		
SalesItem	sales_category (InStoreReference, optional),	The category the item being sold belongs to		

SalesItem	department (InStoreReference, optional),	The department the item being sold belongs to		
SalesItem	type (InStoreReference, optional),	What type of sales item was sold: Stock,Service,Alteration,Fee,Deposit,DepositRefund,Tare,ItemCollection,Warranty,Grade,FeeRefund		
SalesItem	canceled_closed (boolean, optional),	True if this item has been cancelled from the transaction. Otherwise False	???	Must be True if the item was cancelled
SalesItem	voided_closed (boolean, optional),	True if this item has been voided from the transaction. Otherwise False.	YES	Must be True if the item was Voided
SalesItem	non_sales_item (boolean, optional),	True if this item is a non sales item. Otherwise False	YES	
SalesItem	discounted (boolean, optional)	True if this item has been discounted. Otherwise False	YES	Must be True if the item was discounted
SalesItem	modified (boolean, optional),	The modifier for a sales transaction. The modifier might be applied to the original sales item value - but it represents a partial state of data.		
SalesItem	quantity (Integer),	The quantity of item being sold in this transaction	YES	
SalesItem	currency_scale (integer, optional),	required as all numeric values stored as integers		
SalesItem	currency_code (object, optional) = [''],	the ISO currency code		

SalesItem	unit_price (BodhiCurrency, optional),	The selling price of 1 unit of the sales item, excluding tax		
SalesItem	gross_total (BodhiCurrency, optional),	The total value of the line item being sold before taking off discounts and tax		
SalesItem	tax_total (BodhiCurrency, optional),	The total value of tax applied to the line item		
SalesItem	discount_total (BodhiCurrency, optional),	The total value of discounts applied to the line item		
SalesItem	net_total (BodhiCurrency) ,	The total value of the line item after taking off discounts and tax	YES	
SalesItem	tax_details (Array[SalesAmount], optional),	A list of each tax item that makes up the tax total (a list of varying tax types)	1H 2016	
SalesItem	discount_details (Array[SalesAmount], optional),	A list of each discount applied to the sales item.	1H 2016	
SalesItem	tax_index (integer, optional),			
SalesItem	tax_id (string, optional),	Link to the specific type of tax applied before promotions. varies by type (sales, tourist, transient occupancy tax, state) and type (Sales,VAT,GST,PST,HST,Excise)		
SalesItem	tax_exempt (boolean, optional),	True if the entire sales transaction is exempt from tax. Otherwise False.		
SalesItem	external_ids (Array[KeyValuePair], optional),	"Used as an identifier to any external system that needs to link to the sales item. For example the data could be		

		used by the POS and by a loyalty system. The POS key is used as the source key. It could be used as a unique reference in Bodhi - or we could create our own unique key (most likely as the source key does not seem to enforce uniqness) The Loyalty system might provide a key to a loyalty customer that can be used as a look up to associate this transaction to the customer's activity."		
SalesAmount	rate (Real, optional),	Used for tax rate. Should be an integer - not real		
SalesAmount	amount (BodhiCurrency, optional),	The quantity of the sale or tax		
SalesAmount	id (string, optional),	Simple text identfier describing the amount		
SalesAmount	category (string, optional),	The type of amount - could be tax, tender		
SalesAmount	index (integer, optional)	The scale applied when reading the rate or the amount		
TimeCard	store_id (string),	Id for the store at which the event occured	YES	
TimeCard	business_day (string, optional),	Business Day that the event applies to	YES	
TimeCard	employee_id (string, optional),	Id for the employee that the time punch event applies to	YES	
TimeCard	job_id (string, optional),	Job Id that the employee punched into.	YES	

TimeCard	employee_reference (InStoreReference, optional),	{id, name} pair - reference for the employee		
TimeCard	store_reference (InStoreReference, optional),	{id, name} pair - reference for the employee as known at the store level		
TimeCard	job_reference (InStoreReference, optional),	{id, name} pair - reference for the job as known at the store level	YES	
TimeCard	external_ids (Array[KeyValuePair], optional),	{id, name} pair - reference for the timecard to an external system		
TimeCard	regular_rate (BodhiCurrency, optional),	The regular pay rate that is applied to this shift event		
TimeCard	overtime_rate (BodhiCurrency, optional),	The overtime pay rate that is applied to this shift event		
TimeCard	doubletime_rate (BodhiCurrency, optional)	The doubletime pay rate that is appplied to this shift event		
TimeCard	started_at (date-time),	The time the employee clocked in to the shift. Recorded in store local time.	YES	
TimeCard	ended_at (date-time),	The time the employee clocked out of the shift. Recorded in store local time.	YES	

Table 3: **Data Types for HotSchedules (Data from POS to HotSchedules via HotSchedules Platform)**

Below is the table of Data Types for data exported by the HotSchedules Platform to the.

(*) - descriptions below will be updated next week.

Type	Property	Property type	Business Description*	Mandatory	Notes

HSStoreJob	instore_id	String		YES	
HSStoreJob	instore_name	String		YES	
HSStoreJob	store_id	String		YES	
HSStoreJob	regular_rate	BodhiCurrency			
HSStoreJob	overtime_rate	BodhiCurrency			
HSStoreJob	doubletime_rate	BodhiCurrency			
HSStoreEmployee	name	PersonName		yes	
HSStoreEmployee	nickname	String			
HSStoreEmployee	birthdate	DateTime			
HSStoreEmployee	addresses	[PostalAddress]			
HSStoreEmployee	emails	[String]			
HSStoreEmployee	status	String		yes	
HSStoreEmployee	employment_period	DatePeriod		yes	
HSStoreEmployee	instore_id	String		yes	
HSStoreEmployee	hr_id	String			
HSStoreEmployee	store	InStoreReference			
HSStoreEmployee	store_id	String		yes	
HSStoreEmployee	phone_numbers	String			
HSStoreEmployeeJob	store_id	String		yes	

HSStoreEmployeeJob	employee_id	String			
HSStoreEmployeeJob	job_id	String			
HSStoreEmployeeJob	store	InStoreReference		yes	
HSStoreEmployeeJob	employee	InStoreReference		yes	
HSStoreEmployeeJob	job	InStoreReference		yes	
HSStoreEmployeeJob	regular_rate	BodhiCurrency		yes	
HSStoreEmployeeJob	overtime_rate	BodhiCurrency		yes	
HSStoreEmployeeJob	doubletime_rate	BodhiCurrency			
HSStoreEmployeeJob	external_ids	[KeyValuePair]			
HSRevenueCenter	store_id	String		yes	
HSRevenueCenter	instore_id	String		yes	
HSRevenueCenter	instore_name	String			
HSRevenueCenter	display_name	String		yes	
HSSalesCetegory	store_id	String		yes	
HSSalesCetegory	instore_id	String		yes	
HSSalesCetegory	instore_name	String			
HSSalesCetegory	display_name	String		yes	

HSSalesDay	store_id	String		yes	
HSSalesDay	business_day	String		yes	
HSSalesDay	total	BodhiCurrency			
HSSalesDay	count	Integer			
HSSalesDay	items	[HSSalesItem]		yes	
HSSalesDay	store	InStoreReference			
HSSalesItem	store_id	String		yes	
HSSalesItem	business_day	String		yes	
HSSalesItem	transaction_date_time	DateTime		yes	
HSSalesItem	amount	BodhiCurrency		yes	
HSSalesItem	revenue_center	InStoreReference			
HSSalesItem	sales_category	InStoreReference			
HSSalesItem	employee	InStoreReference			
HSSalesItem	store	InStoreReference			
HSSalesItem	order_id	String			
HSSalesItem	transaction_id	String			
HSSalesItem	external_ids	[KeyValuePair]			

HSVolumeDay	store_id	String		yes	
HSVolumeDay	business_day	String		yes	
HSVolumeDay	total	String			
HSVolumeDay	count	Integer			
HSVolumeDay	items	[HSVolumeItem]		yes	
HSVolumeDay	store	InStoreReference			
HSVolumeDay	volume_type	String		yes	“GUEST”,”ENTREE”,”TABLE”
HSVolumeItem	store_id	String		yes	
HSVolumeItem	business_day	String		yes	
HSVolumeItem	transaction_date_time	DateTime		yes	
HSVolumeItem	amount	String		yes	
HSVolumeItem	revenue_center	InStoreReference			
HSVolumeItem	sales_category	InStoreReference			
HSVolumeItem	employee	InStoreReference			
HSVolumeItem	store	InStoreReference			
HSVolumeItem	external_ids	[KeyValuePair]			
HSVolumeItem	volume_type	String		yes	

HSTimecard	store_id	String		yes	
HSTimecard	job_id	String			
HSTimecard	employee_id	String			
HSTimecard	employee_reference	InStoreReference		yes	
HSTimecard	job_reference	InStoreReference		yes	
HSTimecard	store_reference	InStoreReference			
HSTimecard	business_day	String		yes	‘YYYY-MM-DD’
HSTimecard	started_at	DateTime		yes	
HSTimecard	ended_at	DateTime		yes	
HSTimecard	regular_rate	BodhiCurrency		yes	
HSTimecard	overtime_rate	BodhiCurrency		yes	
HSTimecard	doubletime_rate	BodhiCurrency			
HSTimecard	external_ids	[KeyValuePair]			

Table 4: **Data Types for HotSchedules to POS (Data to POS from HotSchedules via HotSchedules Platform)**

Below is the table of Data Types for data exported by the HotSchedules application to HotSchedules Platform; this data needs to be updated within the POS.

HSStoreSchedule	store_id	String		yes	

HSStoreSchedule	employee	InStoreReference		yes	
HSStoreSchedule	job	InStoreReference		yes	
HSStoreSchedule	external	InStoreReference		yes	
HSStoreSchedule	start_at	DateTime		yes	
HSStoreSchedule	stop_at	DateTime		yes	

Table 5: **Data Types for HotSchedules Dashboard (Data from POS to Dashboard via HotSchedules Platform)**

Below is the table of Data Types for data exported by the HotSchedules Platform to the.

(*) - descriptions below will be updated next week.

Type	**Property**	**Property type**	**Business Description***	**Mandatory**	**Notes**
StoreJob	instore_id	String		YES	
StoreJob	instore_name	String		YES	
StoreJob	store_id	String		YES	
StoreJob	regular_rate	BodhiCurrency			
StoreJob	overtime_rate	BodhiCurrency			
StoreJob	doubletime_rate	BodhiCurrency			
Employee	name	PersonName		yes	
Employee	nickname	String			
Employee	birthdate	DateTim			

		e			
Employee	addresses	[PostalAddress]			
Employee	emails	[String]			
Employee	status	String		yes	
Employee	employment_period	DatePeriod		yes	
Employee	instore_id	String		yes	
Employee	hr_id	String			
Employee	store	InStoreReference			
Employee	store_id	String		yes	
Employee	phone_numbers	String			
EmployeePosition	store_id	String		yes	
EmployeePosition	employee_id	String			
EmployeePosition	job_id	String			
EmployeePosition	store_reference	InStoreReference		yes	
EmployeePosition	employee_reference	InStoreReference		yes	
EmployeePosition	job_reference	InStoreReference		yes	
EmployeePosition	status	string			
EmployeePosition	regular_rate	BodhiCurrency		yes	
EmployeePosition	overtime_rate	BodhiCurrency		yes	
EmployeePosition	doubletime_rate	BodhiCurrency			

EmployeePosition	employment_period	DatePeriod			
RevenueCenter	store_id	String		yes	
RevenueCenter	instore_id	String		yes	
RevenueCenter	instore_name	String			
RevenueCenter	display_name	String		yes	
SalesCategory	store_id	String		yes	
SalesCategory	instore_id	String		yes	
SalesCategory	instore_name	String			
SalesCategory	display_name	String		yes	
SalesItem	store_id	String		yes	
SalesItem	business_day	String		yes	
SalesItem	transaction_date_time	DateTime		yes	
SalesItem	amount	BodhiCurrency		yes	
SalesItem	revenue_center	InStoreReference			
SalesItem	sales_category	InStoreReference			
SalesItem	employee	InStoreReference			
SalesItem	store	InStoreReference			
SalesItem	order_id	String			
SalesItem	transaction_id	String			

SalesItem	external_ids	[KeyValuePair]			
Timecard	store_id	String		yes	
Timecard	job_id	String			
Timecard	employee_id	String			
Timecard	employee_reference	InStoreReference		yes	
Timecard	job_reference	InStoreReference		yes	
Timecard	store_reference	InStoreReference			
Timecard	business_day	String		yes	‘YYYY-MM-DD’
Timecard	started_at	DateTime		yes	
Timecard	ended_at	DateTime		yes	
Timecard	regular_rate	BodhiCurrency		yes	
Timecard	overtime_rate	BodhiCurrency		yes	
Timecard	doubletime_rate	BodhiCurrency			
Timecard	external_ids	[KeyValuePair]			