htng

MOVING HOSPITALITY FORWARD

BUSINESS ANALYTICS TRANSACTIONAL EXTRACT SPECIFICATION

For Financial Transactions, Reservations and Blocks

Version 1.0

June 7, 2019

About HTNG

Hospitality Technology Next Generation (HTNG) is a non-profit association with a mission to foster, through collaboration and partnership, the development of next-generation systems and solutions that will enable hoteliers and their technology vendors to do business globally in the 21st century. HTNG is recognized as the leading voice of the global hospitality community, articulating the technology requirements of hotel companies of all sizes to the vendor community. HTNG facilitates the development of technology models for hospitality that will foster innovation, improve the guest experience, increase the effectiveness and efficiency of hotels, and create a healthy ecosystem of technology suppliers.

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1 The Value of Analytics

The lifeblood of any analytics approach is to acquire a hotel's data, which requires integrations, typically with a hotel's property management system (PMS). For hotels, this is a costly and timely process, even if the product they plan to use has the necessary integration components and the hotel is using the correct version of the PMS. For the PMS companies, this also becomes a significant bottleneck, as supplier after supplier requests their own unique data and integrations.

The result is an especially hard industry to innovate in, due to the fragmentation and on-premise nature of most systems and the lack of investment in up-to-date data formats and delivery methodologies. Systems hosted in the basement of the hotel might be perceived as secure, but they provide little opportunity to leverage the data in an industry that is rolling (slowly) toward entry into the data economy.

The less friction there is to exchange data, the faster and easier it will be to integrate systems and increase the potential for innovation. The answer obviously isn't to simply go out and start building their own operating systems. Instead, hotel operators must start to challenge vendors and decide if their data is sufficiently accessible to permit future innovation. Comparatively, hotels cannot just sit back and wait for the entrepreneurs - the same mindset has to sit within the hotel operation, where Research and Development (R&D) teams need to experiment with different technologies.

Our industry is on the verge of a significant revolution where hoteliers become technologists, and securing data freedom through logical collection and storage procedures is the first step in a longer journey.

This Business Analytics Transactional Extract Specifications Document will assist in reducing that friction. By standardizing data from different sources into one clearly defined set of raw, transactional data, the base for meaningful data mining and analytics is laid.

2 DOCUMENT INFORMATION

2.1 DOCUMENT HISTORY

Version	Date	Author	Comments
.01	22 February 2018	Sebastien Januskiewicz	Reservation and Financial transaction Json message
.02	06 March 2018	Sebastien Januskiewicz	Updated Reservation and Financial transaction Json message and element table
.03	18 April 2018	Iris Steinmetz	Added Business Scenarios
.04	19 April 2018	Iris Steinmetz	Added 'The Value of Analytics"
.05	25 April 2018	Marshall Knauf	Added additional business scenarios and named them
.06	16 May 2018	Marshall Knauf	Added table and example messages for fin transactions, added audience section, added known limitations section, added implementation notes
.07	23 May 2018	Sandy Angel	Updated Financial Transactions data table and sample XML message.
.08	30 May 2018	Sandy Angel	Minor edits to Financial Transaction data table.
.09	13 June 2018	Marshall Knauf	Minor edits to Financial Transaction Table, resolved code vs group vs revenue group comment
.10	13 July 2018	Sebastien Januskiewicz	Updated Block Json message
.11	22 June 2018	Sandy Angel	Added Reservations data table and example JSON message to doc
.12	27 July 2018	Sebastien Januskiewicz	Update Json block message
.13	30 July 2018	Sebastien Januskiewicz	Updated Reservation and Financial Transaction data table and Financial Transaction XML
.14	31 July 2018	Sandy Angel	Added Block section, created block data table
.15	8 August 2018	Sandy Angel	Updated the Reservation data table
.16	17 August 2018	Sandy Angel	Made additional updates to the Reservation data table

		Sebastien Januskiewicz	
.17	29 August 2018	Sebastien Januskiewicz	Updates to data tables and json samples alignment
.18	5 September 2018	Sandy Angel	Data table updates and inclusion of two new columns in the data tables for indication of when fields can be empty or null in the JSON messages
.19	19 September 2018	Sandy Angel	Updated data tables to include decisions made on call, add underscore in element names where appropriate, capitalized the D in ID.
.20	02 October 2018	Sebastien Januskiewicz	Updates to table data
.24	22 October 2018	Sandy Angel	Updated XML sample for Financial Transactions
.25		Sandy Angel	Minor edits to data tables.
.26		Sandy Angel	Minor edits to data tables.
.27	13 December 2018	Sandy Angel	Added Commission structure to Reservation Message
.28	3 January 2019	Sandy Angel Sebastien Januskiewicz	Made minor data table modifications
.29	16 January 2019	Sandy Angel Sebastien Januskiewicz	Updated element table New Json samples including last changes
.30	18 January 2019	Sandy Angel	Updated element table to match schema
.31	23 January 2019	Iris Steinmetz	Updated description for the root element on HTNG_ReservationDataNotifRQ
.32	23 January 2019	Sandy Angel	Addition of Further Considerations section written by Marshall Knauf and minor edits to the data tables.
.33	1 February 2019	Sandy Angel	Minor edits to data tables and added updated XML messages with sample data.
.34	5 February 2019	Sebastien Januskiewicz	Minor edits to data tables and added updated XML messages with sample data.
.35	8 February 2019	Sandy Angel	Minor edits to data tables and added updated XML messages with sample data.
.36	10 February 2019	Sebastien Januskiewicz	Minor edits to data tables and XML and JSON examples.

.37	12 February 2019	Sandy Angel	Deletion of resolved comments to clean up document for formal review.
.38	13 February 2019	Sebastien Januskiewicz	Minor edits to data tables and JSON examples.
.39	14 February 2019	Sandy Angel	Changed fields only intended for dates to date vs datetime types. Changed duration fields to integer.
.40	15 February 2019	Sandy Angel	Final Draft for Review
1.0			

2.2 DOCUMENT PURPOSE

Currently, there are many methods for extracting aggregated transactional data, but no standards to extract raw, detailed transactional data from many hospitality business systems to perform business analytics. This document aims to define and establish a specification to solve this problem.

2.3 SCOPE

This specification focuses particularly on Business Analytics Transactional Extracts (BATE) for Financial Transactions, Reservation Data and Group Blocks. A second specification will be developed with Phase II of the BATE Workgroup to include areas such as Point of Sale (POS) Front of House, POS Back of House and the Guest Profile.

2.4 RELATIONSHIP TO OTHER STANDARDS

This specification and its supporting schemas leverage the existing OpenTravel Alliance methodology for message construction and it draws upon data definitions common to several HTNG specifications as of March 2019.

Related specifications:

- HTNG Product Distribution Seamless Shop and Book
- HTNG Eventing
- HTNG Bulk Data
- Open Travel Alliance Specifications
- OTA Payment Method Code List

2.5 USEFUL RESOURCES

- Implementing Web Services Using HTNG Specifications – A Quick Start Guide for Software Developers

2.6 AUDIENCE

This document is written for anyone considering to use analytics in a hospitality context. For revenue managers and senior management who make data-driven decisions, this document will help clarify what

data points can be used in those analyses. For PMS, CRS, and other technology vendors that need to interface with analytics systems, conforming with the standards set forth in this document will allow for easier interfaces with analytics systems. For technology professionals who work on the analytics platforms themselves, this document will help them know what to expect in hospitality, as well as serve as a reference for integration partners that do not know how to optimize their data structures for analytics.

2.7 KNOWN LIMITATIONS

This document has the following limitations that will be addressed in future iterations:

- **Guest Information:** Due to GDPR, the only guest information included in this version will be an anonymous ID. In future versions of this specification, additional details will be added to provide analytics on guest data without violating GDPR.
- **Guest Requests:** In future versions, guest requests will be split out into its own message.

2.8 FURTHER CONSIDERATIONS

Consistency is important when designing standard specifications. To that end, here are a few notes regarding fields and consistencies:

- **Dates:** Date formats, per HTNG standards, are all in ISO8601 format. Dates in this format should have an associated time zone or an offset. If neither is specified, UTC with no offset is assumed. Throughout the specification, when referencing reservations, 'End Date' is inclusive except when ‘end’ refers to a check out date. 'Business Date' is dependent on the implementer's process for closing their books at the end of each day, avoiding situations such as walk-ins at 1:00 a.m. or having a start date prior to reservation date.
- **Names and Codes:** In this specification, the primary key for a given element is the ‘Name’ field with an optional additional field for a ‘Code.’ If you only have one of the two available, the ‘Name’ field should be used as the unique identifier regardless of your internal naming convention. If you have both fields available, and you want the ‘Code’ to be the unique identifier, you can use that in the ‘Name’ field.
- **Enumerated Lists:** This specification uses various enumerated lists for field validation that correspond with existing OpenTravel and HTNG standard lists. However, in many cases there are available values in the standard lists that can convolute analytics, so while there is significant overlap, the enumerated lists are unique to this specification unless otherwise noted in the field description.

  In many of the enumerated lists referenced in this specification, the business logic behind the values are not explicitly constrained; this is by design. Definitions of guest type such as 'child' can vary, as can status values such as 'Optional' versus 'Tentative.' The most important thing is that the values are used consistently. Whether the child cut off age is at 12 versus 14 years old, it is less relevant than picking a value and sticking to it.
- **Updates:** As is standard with reservations in existing OpenTravel and HTNG specifications, when updating a dataset, send a full overlay of data instead of only the fields that change. This serves for a much easier integration between two entities that are otherwise both compliant with this specification.

3 BUSINESS SCENARIOS

The following business scenarios illustrate the value of analytics for drawing actionable conclusions and the helpfulness of raw data extractions in preparation for analytics. Each scenario will relate to one or more of the sample messages in Section 4.

3.1 ADVERTISING SPEND BUDGET

The hotel is ready to embark on a regional advertising campaign for weekend leisure customers and wants to determine which regions to focus its spending and efforts on. The data analytics organization has been asked to generate a report showing how many guests arrived on Friday or Saturday night for a two- or three-night stay from each region. Additionally, they want to know how many of those guests indicated they were traveling for leisure versus business purposes, or did not provide the purpose of their travel. The hotel sales and marketing staff will use this information to target the areas that should attract the most customers.

This scenario requires data within the Reservation Message.

3.2 PICKUP ANALYSIS

The revenue manager is worried about pickup of revenue for the rest of the month of March, as he can see compared to last years' final numbers, he is way behind. He would like to see what the revenue pickup looked like at the same time last year, to identify how the reservations developed over the rest of the month. In case last year's pickup was better at the same time, he will have to act quickly to insure his pickup increases to match or surpass last years' results.

This scenario requires data within the Reservation Message.

3.3 GUEST SEGMENTATION

Marketing would like to identify which of their guests prove to be the most lucrative for the hotel, do some targeted campaigns for those guests and invite them back to stay. Here, they want to look particularly at the long-term value of the guest to them. For this, they would like to see the forecasted revenue versus the achieved spend by market segment and guest type. This will allow them to see what the most interesting segment of guests is, not only from a room rate but as well as from an ancillary spend perspective.

This scenario requires data within the Reservation and Financial Transaction Messages.

3.4 MARKETING EFFICACY

Marketing did a chainwide promotion for specific regions to entice customers from those regions to visit the hotels. Marketing would now like to see the efficiency of the promotion by getting a report of all guests during a specific timespan based on region and filtered by promotional code. They would like to compare this to the same time last year and customer origins to compare the occupancy numbers. Based on this, they will decide whether to adjust or simply re-run the campaign.

This scenario requires data within the Reservation Message.

3.5 EVENT DRIVEN REVENUE FORECAST

Every year there is a big automobile tradeshow in the city. Rooms are usually reserved and often sold as far as two years in advance. The revenue manager needs to decide which big companies or travel agencies to work with, to insure maximum revenue for the hotel. He will want to compare blocks of pickup room nights by travel agents and companies from two years ago until now, as of one month out from the trade show. Based on this he will decide which company or travel agency is most likely to stick to the agreement. He will then look at the average spend of guests during the tradeshow by company and rate code to establish which organization brought most revenue (not only in-room revenue but also additional spend at the hotel). The outcome will then be used to ensure that the appropriate companies and travel agents are allowed to bring their guests during the tradeshow time.

This scenario requires data within the Reservation, Financial Transaction, and Group/Block Messages.

3.6 TOUR OPERATOR VALUE COMPARISON

The reservation manager has a request from a tour operator for discounted rates for the coming year. She now needs to decide whether to grant this or not. She compares the revenue and room nights achieved by the tour operator last year to the forecasted data of this year, adds the current figure on the book data for the whole hotel and then checks the desired time periods against events in the area, before she can decide on granting the required discount.

This scenario requires data within the Reservation, Financial Transaction, and Group/Block Messages.

3.7 MAINTENANCE AND RENOVATIONS PLANNING

The head housekeeper and the head of maintenance would like to schedule renovating some rooms. Together, with the head of reception, they pull a report to compare the on-the-books occupancy against the same time last year and the final data. They also take the forecasted weather and the upcoming events into consideration before they decide whether the required rooms can be taken out of order.

This scenario requires data within the Reservation Message.

3.8 NEW LINE OF BUSINESS

A new spa in a resort has opened. A business plan with budget and forecast was previously put into place. The manager would now, after two months of operation, like to verify assumptions made at the time to the actual numbers achieved, split by resident and non-resident revenue and the market and channel segmentation for granularity. Based on this, he can adjust his business plan and his budget and forecast for the next period.

This scenario requires data within the Reservation Message.

4 MESSAGES

The following messages examples are provided for guidance:

4.1 FINANCIAL TRANSACTIONS

A collection of individual transactions at the time of posting showing actual revenue.

Data Element Table

Element | @Attribute	Card in-ality	XML Only	Data Type	Description/Contents
HTNG_FinancialTransactions NotifRQ			Root Element	A collection of individual transactions at the time of posting to show actual revenue
Transactions	1		Array	A collection of financial transactions
../Transaction	1..n	X	Object	A single financial transaction
../ Transactions/NotificationType	1		String Enumeration	An enumerated list used to specify the type of transaction Available values: • New • Updated • Deleted
../ Transaction/CreatedDateTime	1		DateTime ISO 8601	The date and time that the transaction was created; formatted using ISO 8601
../ Transaction/ModifiedDateTime	1		DateTime ISO 8601	The date and time that the transaction was last modified; formatted using ISO 8601
../ Transaction/ModifiedBy	0..1		String	Identifies the user who last modified this transaction
../ Transaction/TransactionID	1		String	A unique identifier for the transaction
../ Transaction/TransactionType	1		String Enumeration	An enumerated list used to specify the type of transaction Available values: • Payment • Deposit • NonRevenue • Posting

				• Tax • PaidOut • AccountReceivable
../Transaction/TransactionDescription	1		String	A description of the transaction
../ Transaction/TransactionCode	0..1		String	A custom code specifying the type of transaction
../Transaction/TransactionCodeGroup	1		String	Specifies the group for which the transaction applies
../Transaction/TransactionCodeRevenueType	1		String Enumeration	An enumerated listed used to specify the revenue group for which the transaction code applies Available values: • Accommodation • FoodAndBeverage • Tax • Other
../ Transaction/BusinessDate	1		Date	The business date on which this transaction took place. This may be different than the transaction date if the transaction was posted after midnight for a previous day's transaction. Formatting uses ISO 8601.
../ Transaction/CurrencyCodeDetails	1		Object	The currency definition for the transaction
../ CurrencyCodeDetails/Code	1		AlphaLength3	An ISO 4217 (3) alpha character code that specifies a monetary unit
../CurrencyCodeDetails/DecimalPlaces	1		NonNegativeInteger	The number of decimal places for the currency
../Transaction/Amount	0..1		Decimal	The total amount of the transaction
../Transaction/Quantity	0..1		Integer	The number of items related to the amount of the transaction
../ Transaction/IsAdjustment	0..1		Boolean	When true, this transaction is an adjustment
../ Transaction/AdjustmentReason	0..1		String	Describes the reason for adjustment

../Transaction/InvoiceNumber	0..1		String	Invoice number to which the transaction belongs
../ Transaction/PaymentMethod	0..1		String Enumeration	An enumerated list that specifies the method of payment. This field is required if TransactionType is Payment. Available values are: • PaymentCard • BankCard • DirectBill • Voucher • LoyaltyRedemption • MiscChargeOrder • Ticket • Cash
../ Transaction/POS_Details	0..1		Array	A collection of POS detail elements
../POSDetails/POS_Detail	1..n	X	Object	One POS element in the collection of POS elements; used to report the POS that recorded the transaction
../POSDetail/Code	1		String	An identifier of the POS system
../POSDetail/CheckID	0..1		String	An identifier of the POS check that the transaction belongs to
../POSDetail/TransactionID	0..1		String	An identifier for the POS transaction
../POSDetail/Covers	0..1		Integer	The number of covers assigned to the check that the transaction belongs to
../FinancialTransactions/Taxes	0..1	X	Array	A collection of taxes
../Taxes/Tax	1..n		Object	One tax item in a collection of tax items; specifies details of a tax for this transaction
../Taxes/Tax/Type	1		String	Specifies the type for the tax
../Taxes/Tax/Code	1		String	Specifies the tax code (e.g. 17%, VAT 17, VAT 3)
../Taxes/Tax/Amount	1		Decimal	The tax value
../Taxes/Tax/IsIncluded	1		Boolean	When true, this tax is included in the transaction amount

../FinancialTransactions/References	0..1	X	Array	A collection of references
../References/Reference	1..n		Object	Specifies the details of a reference in a collection of references
../Reference/Type	1		String Enum	An enumerated list used to specify the type of reference Available values: • ReservationID • GroupReservationID • RoomStayID • GuestID • SourceOfSaleID • FolioID • GroupFolioID
../Reference/ID	1		String	An identifier for the reference

4.1.1 GLOBAL SAMPLE MESSAGE: XML

The following is a sample Financial Transactions message in XML format:

```
<HTNG_FinancialTransactionsNotifRQ xsi:schemaLocation="http://htng.org/2019A
HTNG_FinancialTransactionsNotifRQ.xsd" xmlns="http://htng.org/2018B"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
    <Transactions>
        <Transaction>
            <NotificationType>New</NotificationType>
            <CreatedDateTime>2018-07-02T09:30:47Z</CreatedDateTime>
            <ModifiedDateTime>2018-07-02T09:30:47Z </ModifiedDateTime>
            <ModifiedBy>user1</ModifiedBy>
            <TransactionID>144674</TransactionID>
            <TransactionType>Posting</TransactionType>
            <TransactionDescription>Bar beverage</TransactionDescription>
            <TransactionCode>210</TransactionCode>
            <TransactionCodeGroup>2000</TransactionCodeGroup>
        <TransactionCodeRevenueType>FoodAndBeverage</TransactionCodeRevenueType>
            <BusinessDate>2018-07-02</BusinessDate>
            <CurrencyCodeDetails>
                <Code>EUR</Code>
                <DecimalPlaces>2</DecimalPlaces>
            </CurrencyCodeDetails>
            <Amount>19.00</Amount>
            <Quantity>1</Quantity>
            <IsAdjustment>false</IsAdjustment>
            <AdjustmentReason></AdjustmentReason>
```

```
            <InvoiceNumber>487597565</InvoiceNumber>
            <POS_Details>
                <POS_Detail>
                    <Code>BAR</Code>
                    <CheckID>98686765</CheckID>
                    <TransactionID>9797065675</TransactionID>
                    <Covers>1</Covers>
                </POS_Detail>
            </POS_Details>
            <Taxes>
                <Tax>
                    <Type>VAT</Type>
                    <Code>VAT 10%</Code>
                    <Amount>1.90</Amount>
                    <IsIncluded>true</IsIncluded>
                </Tax>
            </Taxes>
            <References>
                <Reference>
                    <Type>ReservationID</Type>
                    <ID>4578995</ID>
                </Reference>
            </References>
        </Transaction>
    </Transactions>
</HTNG_FinancialTransactionsNotifRQ>
```

4.1.2 GLOBAL SAMPLE MESSAGE: JSON

The following is a sample Financial Transactions message in JSON format:

```
{

"FinancialTransactions" : [{
        "NotificationType" : "new",
        "CreatedDateTime" : "2018-07-02T13:36:47.550+1:00",
        "ModifiedDateTime" : "2018-07-02T13:36:47.550+1:00",
        "ModifiedBy" : "user1",
        "TransactionId" : "144674",
        "TransactionType" : "Posting",
        "TransactionDescription" : "Bar beverage",
        "TransactionCode" : "210",
        "TransactionCodeGroup" : "2000",
        "TransactionCodeRevenueType" : "FoodAndBeverage",
        "BusinessDate" : "2018-07-02",
        "CurrencyCodeDetails" : {
            "Code" : "EUR",
            "DecimalPlaces" : 2
        },
```

```
            "Amount" : 19.00,
            "Quantity" : 1,
            "IsAdjustment" : false,
            "AdjustmentReason" : null,
            "InvoiceNumber" : "487597565",

            "PaymentMethod" : "",
            "POSDetails" : {
                "Code" : "BAR",
                "TransactionID" : "9797065675",
                "CheckID" : "98686765",
                "Covers" : 1
            },
            "Taxes" : [{
                    "Type" : "VAT",
                    "Code" : "VAT 10%",
                    "Amount" : 1.90,
                    "IsIncluded" : true
                }
            ],
            "References" : [{
                    "Type" : "ReservationID",
                    "Id" : "4578995"
                }
            ]

        }
    ]
}
```


4.2 RESERVATIONS

Data Element Table - Request

Element | @Attribute	Card in-ality	XML Only	Data Type	Description/Contents
HTNG_ReservationDataNotifRQ	1		Root Element	A collection of reservation data presenting the actual, transactional state of the booking
Reservations	1		Array	A collection of reservations
../Reservation	1..n	X	Object	A single reservation in the collection of reservations

../Reservation/NotificationType	1		String Enumeration	An enumerated list to identify the type of notification being sent Available values: • New • Updated • Deleted
../Reservation/ReservationID	1		String	A unique ID for the reservation
../Reservation/ConfirmationID	1		String	The reservation confirmation ID
../Reservation/ExternalReferences	0..1		Array	A collection of external references
./ ExternalReferences/ExternalReference	1..n	X	Object	An external reference is a means of identifying the reservation on other systems. For example, the reservation that initiates within an OTA and then is transferred to a CRS and finally to a PMS, it may have different references for each of these three systems.
../ ExternalReferences /ExternalReference/ID	1		String	A string that uniquely identifies the system that uses the reference; for example, the specific OTA
../ ExternalReferences /ExternalReference/Name	1		String	Name of the external reference
../ ExternalReferences /ExternalReference/IsPointOfSale	1		Boolean	When true, the external reference is the source of sale
../ ExternalReferences /ExternalReference/Type	0..1		String Enumeration	Define the type of the profile if the external reference is a profile linked to the reservation. Available value: • Customer • GDS • Corporation • TravelAgent • Wholesaler • Group • TourOperator • CRO • RepresentationCompany • InternetBroker

				• Airline • Hotel • CarRental • CruiseLine • Employee • EventHost • SupplierPartner • BillingContact • AuthorizedSigner • GeneralServiceContractor • Arranger • Association • TravelAgency
../ ExternalReferences /ExternalReference/ExternalReferenceReservationID	0..1		String	The key that can be used to retrieve the related record in the source system
../Reservation/Start	1		Date	The business arrival date for the reservation; formatted using ISO 8601
../Reservation/End	1		Date	The business departure date for the reservation; formatted using ISO 8601
../Reservation/Status	1		String Enumeration	An enumerated list identifying the status of this reservation Available values: • Reserved • Tentative • Optional • Cancelled • No-show • Waitlisted • In-house • CheckedOut
../Reservation/CreatedDateTime	1		DateTime ISO 8601	The date and time the reservation was created; formatted using ISO 8601
../Reservation/ModifiedDateTime	1		DateTime	The date and time the reservation was last modified, if reservation has not been modified use date created; formatted using ISO 8601
../Reservation/ModifiedBy	0..1		String	The user or system who last modified the reservation

../Reservation/CancellationBusinessDate	0..1		Date	The business date of the cancellation (this is not time zone sensitive); formatted using ISO 8601.
../Reservation/CancellationDateTime	0..1		DateTime	The actual calendar cancellation date and time; formatted using ISO 8601
../Reservation/CancellationReason	0..1		String	Reason for the cancellation
../Reservation/OptionDate	0..1		DateTime	The date and time the reservation will be invalid if not confirmed; formatted using ISO 8601
../Reservation/Currency	1		Object	Provides a currency code and decimal places to reflect the currency in which an amount may be expressed
../ReservationTotal/Code	1		String	An ISO 4217 (3) alpha character code that specifies a monetary unit
../ReservationTotal/DecimalPlaces	1		Decimal	The ISO 4217 standard "minor unit" for the number of decimal places for a particular currency
../Reservation/BlockID	0..1		String	Associated block unique ID
../Reservation/Group	0..1		Object	Associated group details
../group/ID	1		String	Associated group unique ID; if the ID is unavailable, populate with the group name
../group/Code	0..1		String	Associated group short name/code
../group/Name	1		String	Associated group name; if group name is not available, populate with the group ID
../Reservation/ReservationTotal	1		Object	Reservation level rate, tax and fee details
../ReservationTotal/Amount	1		Decimal	The total amount of the reservation including additions, fees and taxes that are flagged as included
../ReservationTotal/Taxes	0..1		Array	A collection of taxes paid on the reservation
../Tax/Tax	1..n	X	Object	One tax item in the collection of taxes
../Tax/Type	1		String	Specifies the type for the tax
../Tax/Code	1		String	Identifies the tax (city, VAT, etc.)

../Tax/Amount	1		Decimal	The amount of the tax
../Tax/IsIncluded	1		Boolean	When true, this tax is included in the reservation total amount
../ReservationTotal/Fees	0..1		Array	A collection of fees paid on the reservation
../ FeeDetails /Fee	1..n	X	Object	One fee item in the collection of fees
../ FeeDetail/RevenueType	1		String Enumeration	Revenue type associated to the fee The available values are: • Accommodatiioin • FoodAndBeverage • Taxes • Other
../ FeeDetail/RevenueCode	0..1		String	Revenue code is a value associated to the fee and where it is handled in the chart of accounts
../ FeeDetail/Code	1		String	Identifies the fee (e.g. Resort)
../FeeDetail/Amount	1		Decimal	The amount of the fee
../ FeeDetail/IsIncluded	1		Boolean	When true, this fee is included in the reservation total amount
.../Reservations/RoomStays	1		Array	A collection of room stays
../RoomStays/RoomStay	1..n	X	Object	One room stay in the collection of room stays
../RoomStay/ID	1		String	A unique ID for this room stay
../RoomStay/CancellationBusinessDate	0..1		Date	The business date for the cancellation; formatted using ISO 8601
../RoomStay/CancellationDateTime	0..1		DateTime	The real date and time of the cancellation for this room stay; formatted using ISO 8601
../RoomStay/CancellationReason	0..1		String	Specifies the reason for the cancellation
../RoomStay/SharerIDs	0..1		Array	A collection of unique IDs identifying reservations allocated to the room
../SharerIDs/SharerID	1..n	X	String	Unique ID of additional reservation allocated to the room
../RoomStay/IsComplimentary	0..1		Boolean	When true, the room stay is complimentary
../RoomStay/IsHouseUse	0..1		Boolean	When true, the room stay is for house use
../RoomStay/Start	1		Date ISO 8601	Arrival date for the room stay (business date); formatted using ISO 8601

../RoomStay/EstimatedDateTimeOfArrival	0..1		DateTime ISO 8601	Estimated date and time of arrival formatted using ISO 8601
../RoomStay/ActualDateTimeOfArrival	0..1		DateTime ISO 8601	Actual date and time of arrival; formatted using ISO 8601
../RoomStay/End	1		Date ISO 8601	Departure date for the room stay (business date); formatted using ISO 8601
../RoomStay/EstimatedDateTimeOfDeparture	0..1		DateTime ISO 8601	Estimated date and time of departure; formatted using ISO 8601
../RoomStay/ActualDateTimeOfDeparture	0..1		DateTime ISO 8601	Actual date and time of departure; formatted using ISO 8601
../RoomStay/Status	1		String Enumeration	An enumerated list describing the status of the room. The available options are: • Reserved • Tentative • Optional • Cancelled • No-show • Waitlisted • In-house • CheckedOut
../RoomStay/Units	1		Array	A collection of the types of rooms and the dates they are reserved
../Units/Unit	1..n	X	Object	One unit in the collection of units
../Unit/Start	1		Date ISO 8601	The start date for the accommodation unit
../Unit/End	1		Date ISO 8601	The end date for the accommodation unit for which the values defined in the array apply For example, if the guest is arriving on the 1st and departing on the 3rd the end date is the 2nd, due to no values being applied to the checkout date
../Unit/ReservedUnitCount	1		Integer	Number of reserved units
../Unit/PhysicalUnitCount	0..1		Integer	Number of occupied units
../Unit/UnitType	1		String Enumeration	Specifies the type of unit The available values are:

				• SingleBedroom • DoubleBedroom • KingBedroom • QueenBedroom • TwinBedroom • TripleBedroom • QuadrupleBedroom • FamilyRoom • JuniorSuite • Suite • LargeSuite • Parlour • Apartment • Penthouse • Studio • Condo • Loft • Bungalow • Villa • Cottage • Cabin • Lodge • Tent • Dormitory • Bed • RunOfHouse • Room • ConnectedRoom
../Unit/BookedRoomTypeCode	0..1		String	Booked room type code
../Unit/BookedRoomTypeName	1		String	Booked room type name
../Unit/BookedRoomCategoryCode	0..1		String	Booked room category code
../Unit/BookedRoomCategoryName	0..1		String	Booked room category name
../Unit/OccupiedRoomTypeCode	0..1		String	Occupied room type code Note: Occupied room type will default to the same as booked room type

				unless an alternate room type has been assigned
../Unit/OccupiedRoomTypeName	1		String	Occupied room type name Note: Occupied room type will default to the same as booked room type unless an alternate room type has been assigned
../Unit/OccupiedRoomCategoryCode	0..1		String	Occupied room category code
../Unit/OccupiedRoomCategoryName	1		String	Occupied room category name
../Unit/IsForecasted	1		Boolean	When true, indicates the units are forecasted and will be considered in the occupancy calculation
../Unit/RoomNumber	0..1		String	The room number of the unit
../Unit/ExtraBeds	0..1		Array	A collection of extra beds associated to the unit (e.g. rollaway beds, cribs)
../ExtraBeds/ExtraBed	1..n		Object	An extra bed type and quantity associated with this unit
../ExtraBed/Type	1		String Enumeration	The type of extra bed associated with this unit The available values are: • Rollaway • Crib
../ExtraBed/Count	1		Integer	The quantity of extra beds of the designated type
../RoomStay/Rates	1		Array	A collection of rates for all rate plans in the room stay
../Rates/Rate	1..n	X	Object	One rate item in the collection of rates
../Rate/Start	1		Date	The start date of the stay in this room type (business date); formatted using ISO 8601
../Rate/End	1		Date	The end date of the stay in this room type (business date); formatted using ISO 8601
../Rate/RatePlanCode	1		String	Rate plan reference code from the collection of rate plans
../Rate/RateDetails	1		Array	A collection of pricing and revenue details for the rate
../RateDetails/RateDetail	1..n	X	Object	One pricing and revenue details item for the rate in the collection

../ RateDetail/RevenueType	1		String Enumeration	An enumerated list that specifies the revenue type for the price item The available values are: • Accommodation • FoodAndBeverage • Taxes • Other
../ RateDetail/RevenueCode	1		String	Revenue code associated to the rate
../ RateDetail/Amount	1		Decimal	The amount allocated to the revenue code
../ RateDetail/Taxes	1		Array	A collection of taxes.
../Taxes/Tax	1	X	Object	One tax item in a collection of taxes
../Tax/Type	1		String	Specifies the type for the tax
../Tax/Code	1		String	Identifies the tax (city, VAT, etc.)
../Tax/Amount	1		Decimal	Amount of the tax
../Tax/IsIncluded	1		Boolean	When true, this tax is included in the rate amount
../RoomStay/Fees	0..1		Array	A collection of fees for the room stay
../Fees/Fee	1..n	X	Object	One fee item in the collection of fee items
.. /Fee/Start	1		Date	Start date for when the fees apply (business date); formatted using ISO 8601
.. /Fee/End	1		Date	End date for when the fees applies (business date); formatted using ISO 8601
.. /Fee/FeeDetails	1		Array	A collection of fee details for the specified date range
../FeeDetails/FeeDetail	1..n	X	Object	One fee detail item in the collection of fee detail items
../FeeDetail/RevenueType	1		String Enumeration	An enumerated list that specifies the revenue type for the price item The available values are: • Accommodation • FoodAndBeverage • Taxes • Other
../FeeDetail/RevenueCode	1		String	Revenue code associated to the fee
../FeeDetail/Code	1		String	Identifies the fee

../FeeDetail/Amount	1		Decimal	Amount for the fee
../FeeDetail/IsIncluded	1		Boolean	When true, this fee is included in the rate amount
../ FeeDetail/Taxes	0..1		Array	A collection of taxes
../Taxes/Tax	1..n	X	Object	One tax item in a collection of taxes
../Tax/Type	1		String	Specifies the type for the tax
../Tax/Code	1		String	Identifies the tax (city, VAT, etc.)
../Tax/Amount	1		Decimal	Amount of the tax
../Tax/IsIncluded	1		Boolean	When true, this tax included in the rate amount
../RoomStay/RatePlans	1		Array	A collection of rate plans in the reservation
../RatePlans/RatePlan	1..n	X	Object	One rate plan item in the collection of rate plans
../RatePlan/Code	1		String	The rate plan code or short name
../RatePlan/Name	1		String	The name of the rate plan
../RatePlan/Description	0..1		String	Description of the rate plan
../RatePlan/CategoryCode	0..1		String	Rate plan category short name
../RatePlan/CategoryName	0..1		String	Rate plan category long name
../RoomStay/Segmentation	0..1		Object	The business segmentation description of the reservation
../Segmentation/Markets	0..1		Object	A collection of market segment items
../Markets/Market	1..n	X	Object	One market item in the collection of markets items
../Market/Start	1		Date	The start business date for which the values defined in the collection applies; formatted using ISO 8601
../Market/End	1		Date	The end business date for which the values defined in the collection applies; formatted using ISO 8601
../Market/Code	0..1		String	The market segment short name
../Market/Name	1		Sting	The market segment long name
../Market/CategoryCode	0..1		String	The market category short name
../Market/CategoryName	0..1		String	The market category long name
../Segmentation/Sources	0..1		Array	A collection of sources
../Sources/Source	1..n	X	Object	One source item in the collection of sources

../Source/Start	1		Date	The start business date for which the values defined in the collection applies; formatted using ISO 8601
../Source/End	1		Date	The end business date for which the values defined in the collection applies; formatted using ISO 8601
../Source/Code	0..1		String	The short name
../Source/Name	1		String	The long name
../Source/CategoryCode	0..1		String	The source category short name
../Source/CategoryName	0..1		String	The source category long name
../Segmentation/Origins	0..1		Array	A collection of origins
../Origins/Origin	1..n	X	Object	One origin item in the collection of origins
../Origin/Start	1		Date	The start business date range for which the values defined in the collection applies; formatted using ISO 8601
../Origin/End	1		Date	The end business date range for which the values defined in the collection applies; formatted using ISO 8601
../Origin/Code	0..1		String	The short name
../Origin/Name	1		String	The long name
../Origin/CategoryCode	0..1		String	The origin category short name
../Origin/CategoryName	0..1		String	The origin category long name
../RoomStay/OccupancyDetails	0..1		Array	A collection of occupancy details
../OccupancyDetails/OccupancyDetail	1..n	X	Object	One occupancy item in the collection of occupancy details
../ OccupancyDetail/Start	1		Date	The start business date for which the values defined in the collection applies; formatted using ISO 8601
../ OccupancyDetail/End	1		Date	The end business date for which the values defined in the collection applies; formatted using ISO 8601
../ OccupancyDetail/IsPerUnit	1		Boolean	When true, the occupancy applies for each unit in the reservation
../ OccupancyDetail/Occupants	1		Array	A collection of occupants and their age classifications for the room stay
../Occupants/Occupant	1..n	X	Object	One or more occupants of the specified type

../Occupant/Count	1		Integer	Number of occupants of this age type
../ Occupant/AgeQualifyingCode	1		String Enumeration	An enumerated list that specifies the type of occupant The available values are: • Adult • Child • Infant • Senior
../ Occupant/Age	0..1		Integer	Age of the occupant
../RoomStay/Guests	0..1		Array	A collection of guest details
../Guests/Guest	1..n	X	Object	An individual guest in the collection of guests
../Guest/ID	1		String	A unique guest ID
../Guest/IsPrimary	1		Boolean	When true, this guest it the primary guest
../Guest/CountryOfResidence	0..1		String ISO Code 3166	The country of residence - ISO Code 3166 Alpha 2
../Guest/Nationality	0..1		String ISO Code 3166	Nationality - ISO Code 3166 Alpha 2
../Guest/VIPLevelCode	0..1		String	The code identifying the guest VIP level
../Guest/LoyaltyDetails	0..1		Array	A collection of loyalty information
../LoyaltyDetails/LoyaltyDetail	1..n	X	Object	One loyalty detail item in a collection of loyalty details
../ LoyaltyDetail /ProgramCode	1		String	A code identifying the loyalty program
../ LoyaltyDetail /ProgramType	0..1		String Enumeration	An enumerated list identifying the type of the loyalty program Available values: • Airline • Hotel • Independent • OnlineTravelAgency • Other
../ LoyaltyDetail /LevelCode	0..1		String	The code identifying the guest loyalty level
../RoomStay/SpecialRequests	0..1		Array	A collection of guest requests
../SpecialRequests/SpecialRequest	1..n	X	object	One guest request in the collection of guest requests

../SpecialRequest/ID	0..1		string	Unique Id of the special request
../SpecialRequest/Code	0..1		string	Code or short name of the request
../SpecialRequest/Name	1		string	Long name of the request
../RoomStay/RoomAddOns	0..1		Array	A collection of addons to the room stay; add-ons are by default included in the rate
../RoomAddOns/RoomAddOn	1..n	X	object	One add-on item in the collection of add on items
../RoomAddOn/Start	1		date	The start business date for which the values defined in the collection applies
../RoomAddOn/End	1		date	The end business date for which the values defined in the collection applies
../RoomAddOn/Code	1		string	The code identifying the type of the add on
../RoomAddOn/Description	0..1		string	The description of the add on
../RoomAddOn/RateCode	1		string	The rate code the add on is linked to
../RoomAddOn/Quantity	1		integer	The quantity of the add on item
../RoomAddOn/UnitPricings	1		Array	A collection of price details of the add on per quantity
../UnitPricings/UnitPricing	1..n	X	object	One unit pricing in the collection of unit pricings
../UnitPricing/RevenueType	1		string enumeration	An enumerated list identifying the revenue type for the price item The available values are: • Accommodation • FoodAndBeverage • Taxes • Other
../UnitPricing/RevenueCode	1		string	The revenue code for the price item
../UnitPricing/Amount	1		decimal	Amount of the price item
../UnitPricing/Taxes	1		Array	A collection of taxes
../Taxes/Tax	1	X	object	One tax in the collection of taxes
../Tax/Type	1		string	Type of the tax
../Tax/Code	1		string	Identifies the tax (city, VAT, etc.)
../Tax/Amount	1		decimal	Amount of the tax
../Tax/IsIncluded	1		boolean	When true, this tax is included in the unit price

../RoomStay/Additions	0..1		Array	A collection of additions purchased with the reservation that are not included in the rate code
../Additions/Addition	1..n	X	object	One additional purchase item in the collection of additions
../Addition/Start	1		date	The start business date for which the values defined in the collection applies
../Addition/End	1		date	The end business date for which the values defined in the collection applies
../Addition/Code	1		string	The code identifying the item
../Addition/Description	0..1		string	A short description of the item
../Addition/RateCode	1		string	The rate code the item belongs to
../Addition/Quantity	1		integer	The quantity purchased
../Addition/UnitPricing	1		Array	A collection of price details of the add on per quantity
../UnitPricing/UnitPricing	1	X	object	One-unit pricing in the collection of unit pricings
../UnitPricing/RevenueType	1		string enumeration	The revenue type for the price item The available values are: • Accommodation • FoodAndBeverage • Taxes • Other
../UnitPricing/RevenueCode	1		string	The revenue code for the price item
../UnitPricing/Amount	1		decimal	Amount of the price item
../UnitPricing/Taxes	1		Array	A collection of taxes
../Taxes/Tax	1	X	object	One tax in the collection of taxes
../Tax/Type	1		string	Type of the tax
../Tax/Code	1		string	Identifies the tax (city, VAT, etc.)
../Tax/Amount	1		decimal	Amount of the tax
../Tax/IsIncluded	1		boolean	When true, this tax is included in the unit price.
../RoomStay/Commissions	0..1		array	A collection of commission items that apply to this room stay
../Commissions/Commission	1..n	X	object	Commission associated with the RoomStay; this can be a percentage or a flat amount

../Commission/Start	1		date	The start date for the commission, formatted using ISO 8601
../Commission/End	1		date	The end date for the commission, formatted using ISO 8601
../Commission/RefID	0..1		string	Identifies the recipient of the commission
../Commission/CommissionableAmount	0..1		object	The amount on which commission is calculated
../CommissionableAmount/Amount	1		decimal	The amount on which commission is calculated
../CommissionableAmount/TaxInclusiveIndicator	0..1		boolean	When true, indicates that the commission is calculated using the rate including tax When false, indicates that the commission is calculated using the net rate
../Commission/Percent	0..1		Percentage	The percent applied to the commissionable amount to determine the commission payable amount
../Commission/FlatCommissionAmount	0..1		decimal	The amount of the fixed commission
../Commission/CommissionPayableAmount	0..1		decimal	The amount of commission paid

Global Sample Message – Request
Global Sample Message – Response

4.2.1 Global Sample Message: XML

The following is a sample Reservations message in XML format:

```
<HTNG_ReservationDataNotifRQ xsi:schemaLocation="http://htng.org/2019A
HTNG_ReservationDataNotifRQ.xsd" xmlns="http://htng.org/2018B"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
    <Reservations>
        <Reservation>
            <NotificationType>New</NotificationType>
            <ReservationID>4578995</ReservationID>
            <ConfirmationID>RES-100000</ConfirmationID>
            <ExternalReferences>
                <ExternalReference>
                    <ID>17644897</ID>
                    <Name>ARTE Travel</Name>
                    <IsPointOfSale>true</IsPointOfSale>
                    <Type>TravelAgent</Type>
```

```
            <ExternalReferenceReservationID></ExternalReferenceReservationID>
        </ExternalReference>
    </ExternalReferences>
    <Start>2018-07-01</Start>
    <End>2018-07-07</End>
    <Status>Reserved</Status>
    <CreatedDateTime>2017-12-01T09:30:47Z</CreatedDateTime>
    <ModifiedDateTime>2017-12-01T09:30:47Z</ModifiedDateTime>
    <ModifiedBy>user 1</ModifiedBy>
    <Currency>
        <Code>EUR</Code>
        <DecimalPlaces>2</DecimalPlaces>
    </Currency>
    <BlockID></BlockID>
    <Group>
        <ID>896796969</ID>
        <Code></Code>
        <Name></Name>
    </Group>
    <ReservationTotal>
        <Amount>963.00</Amount>
        <Taxes>
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                <Type>VAT</Type>
                <Code>VAT 10%</Code>
                <Amount>96.00</Amount>
                <IsIncluded>true</IsIncluded>
            </Tax>
        </Taxes>
        <Fees>
            <Fee>
                <RevenueType>Taxes</RevenueType>
                <RevenueCode>Other Taxes</RevenueCode>
                <Code>City tax</Code>
                <Amount>3.00</Amount>
                <IsIncluded>true</IsIncluded>
            </Fee>
        </Fees>
    </ReservationTotal>
    <RoomStays>
        <RoomStay>
            <ID>4578995-1</ID>
            <SharerIDs>
                <SharerID>123445</SharerID>
            </SharerIDs>
            <IsComplimentary>false</IsComplimentary>
            <IsHouseUse>false</IsHouseUse>
            <Start>2018-07-01</Start>
            <EstimatedDateTimeOfArrival>2018-07-01T09:30:47Z</EstimatedDateTimeOfArrival>
```

```
            <ActualDateTimeOfArrival>2018-07-01T10:30:47Z</ActualDateTimeOfArrival>
            <End>2018-07-07</End>
            <EstimatedDateTimeOfDeparture>2018-07-
07T09:30:47Z</EstimatedDateTimeOfDeparture>
            <ActualDateTimeOfDeparture>2018-07-07T09:30:47Z</ActualDateTimeOfDeparture>
            <Status>CheckedOut</Status>
            <Units>
               <Unit>
                  <Start>2018-07-01</Start>
                  <End>2018-07-03</End>
                  <ReservedUnitCount>1</ReservedUnitCount>
                  <PhysicalUnitCount>1</PhysicalUnitCount>
                  <UnitType>Room</UnitType>
                  <BookedRoomTypeCode>STE</BookedRoomTypeCode>
                  <BookedRoomTypeName>Suite</BookedRoomTypeName>
                  <BookedRoomCategoryCode>SUP</BookedRoomCategoryCode>
                  <BookedRoomCategoryName>Superior</BookedRoomCategoryName>
                  <OccupiedRoomTypeCode>STE</OccupiedRoomTypeCode>
                  <OccupiedRoomTypeName>Suite</OccupiedRoomTypeName>
                  <OccupiedRoomCategoryCode>SUP</OccupiedRoomCategoryCode>
                  <OccupiedRoomCategoryName>Superior</OccupiedRoomCategoryName>
                  <IsForcasted>true</IsForcasted>
                  <RoomNumber>15</RoomNumber>
                  <ExtraBeds>
                     <ExtraBed>
                     <Type>Rollaway</Type>
                     <Count>1</Count>
                     </ExtraBed>
                  </ExtraBeds>
               </Unit>
               <Unit>
                  <Start>2018-07-04</Start>
                  <End>2018-07-06</End>
                  <ReservedUnitCount>1</ReservedUnitCount>
                  <PhysicalUnitCount>1</PhysicalUnitCount>
                  <UnitType>Room</UnitType>
                  <BookedRoomTypeCode>STE</BookedRoomTypeCode>
                  <BookedRoomTypeName>Suite</BookedRoomTypeName>
                  <BookedRoomCategoryCode>SUP</BookedRoomCategoryCode>
                  <BookedRoomCategoryName>Superior</BookedRoomCategoryName>
                  <OccupiedRoomTypeCode>STE</OccupiedRoomTypeCode>
                  <OccupiedRoomTypeName>Suite</OccupiedRoomTypeName>
                  <OccupiedRoomCategoryCode>SUP</OccupiedRoomCategoryCode>
                  <OccupiedRoomCategoryName>Superior</OccupiedRoomCategoryName>
                  <IsForcasted>true</IsForcasted>
                  <RoomNumber>20</RoomNumber>
               <ExtraBeds>
                  <ExtraBed>
                     <Type>Rollaway</Type>
```

```
                <Count>1</Count>
                </ExtraBed>
            </ExtraBeds>
        </Unit>
    </Units>
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                    <RevenueCode>Rooms</RevenueCode>
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                            <Type>VAT</Type>
                            <Code>VAT 10%</Code>
                            <Amount>12.00</Amount>
                            <IsIncluded>true</IsIncluded>
                        </Tax>
                    </Taxes>
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                <RateDetail>
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                    <RevenueCode>Breakfast</RevenueCode>
                    <Amount>20.00</Amount>
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                        <Tax>
                            <Type>VAT</Type>
                            <Code>VAT 10%</Code>
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                    </Taxes>
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            </RateDetails>
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                    <Amount>160.00</Amount>
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```

```
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            </RateDetails>
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    </Rates>
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                    <Code>City Tax</Code>
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                    <IsIncluded>false</IsIncluded>
                </FeeDetail>
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        </Fee>
    </Fees>
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            <Name>Holidays</Name>
            <Description>Holidays offer 2018</Description>
            <CategoryCode>OF18</CategoryCode>
            <CategoryName>Offer 2018</CategoryName>
        </RatePlan>
    </RatePlans>
    <Segmentation>
```

```
            <Markets>
                <Market>
                    <Start>2018-07-01</Start>
                    <End>2018-07-06</End>
                    <Code>INDLEI</Code>
                    <Name>Individual Leisure</Name>
                    <CategoryCode>IND</CategoryCode>
                    <CategoryName>Individual</CategoryName>
                </Market>
            </Markets>
            <Sources>
                <Source>
                    <Start>2018-07-01</Start>
                    <End>2018-07-06</End>
                    <Code>OTA</Code>
                    <Name>Online Travel Agent</Name>
                    <CategoryCode>TA</CategoryCode>
                    <CategoryName>Travel Agent</CategoryName>
                </Source>
            </Sources>
            <Origins>
                <Origin>
                    <Start>2018-07-01</Start>
                    <End>2018-07-06</End>
                    <Code>CRS</Code>
                    <Name>Central Reservation System</Name>
                    <CategoryCode>TP</CategoryCode>
                    <CategoryName>Third Party</CategoryName>
                </Origin>
            </Origins>
        </Segmentation>
        <OccupancyDetails>
            <OccupancyDetail>
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                <End>2018-07-06</End>
                <IsPerUnit>true</IsPerUnit>
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                        <Count>2</Count>
                        <AgeQualifyingCode>Adult</AgeQualifyingCode>
                    </Occupant>
                </Occupants>
            </OccupancyDetail>
        </OccupancyDetails>
        <Guests>
            <Guest>
                <ID>GUEST-100000</ID>
                <IsPrimary>true</IsPrimary>
                <CountryOfResidence>DE</CountryOfResidence>
```

```
            <Nationality>US</Nationality>
            <LoyaltyDetails>
                <LoyaltyDetail>
                    <ProgramCode>ALP</ProgramCode>
                    <ProgramType>Other</ProgramType>
                    <LevelCode>ALP-123424-PO</LevelCode>
                </LoyaltyDetail>
            </LoyaltyDetails>
        </Guest>
    </Guests>
    <SpecialRequests>
        <SpecialRequest>
            <ID>708708</ID>
            <Code>X-P</Code>
            <Name>Extra Pillow</Name>
        </SpecialRequest>
    </SpecialRequests>
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            <Start>2018-07-01</Start>
            <End>2018-07-06</End>
            <Code>BRK BT</Code>
            <Description>Breakfast Buffet</Description>
            <RateCode>HOL</RateCode>
            <Quantity>2</Quantity>
            <UnitPricings>
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                    <RevenueCode>Breakfast</RevenueCode>
                    <Amount>10.00</Amount>
                    <Taxes>
                        <Tax>
                            <Type>VAT</Type>
                            <Code>VAT 10%</Code>
                            <Amount>1.00</Amount>
                            <IsIncluded>true</IsIncluded>
                        </Tax>
                    </Taxes>
                    <ChargeUnit>Per person per night</ChargeUnit>
                </UnitPricing>
            </UnitPricings>
        </RoomAddOn>
    </RoomAddOns>
    <Additions>
        <Addition>
            <Start>2018-07-01</Start>
            <End>2018-07-06</End>
            <Code>Ticket PP</Code>
            <Description>Ticket Pool Party</Description>
```

```
                    <RateCode>HOL</RateCode>
                    <Quantity>2</Quantity>
                    <UnitPricings>
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                            <RevenueCode>Bar</RevenueCode>
                            <Amount>50.00</Amount>
                            <Taxes>
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                                    <Type>VAT</Type>
                                    <Code>VAT 10%</Code>
                                    <Amount>5.00</Amount>
                                    <IsIncluded>true</IsIncluded>
                                </Tax>
                            </Taxes>
                            <ChargeUnit>Per person per night</ChargeUnit>
                        </UnitPricing>
                        <UnitPricing>
                            <RevenueType>Other</RevenueType>
                            <RevenueCode>DJ</RevenueCode>
                            <Amount>10.00</Amount>
                            <Taxes>
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                                    <Type>VAT</Type>
                                    <Code>VAT 10%</Code>
                                    <Amount>1.00</Amount>
                                    <IsIncluded>true</IsIncluded>
                                </Tax>
                            </Taxes>
                            <ChargeUnit>Per person per stay</ChargeUnit>
                        </UnitPricing>
                    </UnitPricings>
                </Addition>
            </Additions>
            <Commissions>
                <Commission>
                    <Start>22018-07-01</Start>
                    <End>22018-07-06</End>
                    <RefID>12G</RefID>
                    <CommissionableAmount>
                        <Amount>960.00</Amount>
                        <TaxInclusiveIndicator>true</TaxInclusiveIndicator>
                    </CommissionableAmount>
                    <Percent>12</Percent>
                </Commission>
            </Commissions>
        </RoomStay>
    </RoomStays>
</Reservation>
```

```
    </Reservations>
</HTNG_ReservationDataNotifRQ>
```

4.2.2 Global Sample Message: JSON

The following is a sample Reservation message in JSON format:

```
{
    "Reservations" : [{

            "NotificationType" : "New",
            "ReservationID" : "4578995",
            "ConfirmationID" : "RES-100000",
            "ExternalReferences" : [{
                    "ID" : "17644897",
                    "Name" : "ARTE Travel",
                    "IsPointOfSale" : true,
                    "Type" : "TravelAgent",
                    "ExternalReferenceReservationId" : null

                }
            ],
            "Start" : "2018-07-01",
            "End" : "2018-07-07",
            "Status" : "Reserved",
            "CreatedDateTime" : "2017-12-01T13:36:47.550+1:00",
            "ModifiedDateTime" : "2017-12-01T13:36:47.550+1:00",
            "ModifiedBy" : "User 1",
            "CancellationBusinessDate" : null,
            "CancellationDateTime" : null,
            "CancellationReason" : null,
            "OptionDate" : null,
            "Currency" : {
                "Code" : "EUR",
```

```
        "DecimalPlaces" : 2
    },
    "BlockID" : "896796969",
    "Group" : {
        "ID" : "",
        "Code" : "",
        "Name" : ""
    },

    "ReservationTotal" : {
        "Amount" : 963.00,

        "Taxes" : [{
                "Type" : "VAT",
                "Code" : "VAT 10%",
                "Amount" : 96.00,
                "IsIncluded" : true
            }
        ],
        "Fees" : [{
                "RevenueType" : "Taxes",
                "RevenueCode" : "Other Taxes",
                "Code" : "City tax",
                "Amount" : 3.00,
                "IsIncluded" : true
            }
        ]
    },
    "RoomStays" : [{
            "ID" : "4578995-1",
            "CancellationBusinessDate" : null,
            "CancellationDateTime" : null,
```

```
"CancellationReason" : null,
"SharerIDs" : [{
        "SharerID" : "123445"
    }
],
"IsComplimentary" : false,
"IsHouseUse" : false,
"Start" : "2018-07-01",
"EstimatedDateTimeOfArrival" : "2018-07-01T11:00:00.000+1:00",
"ActualDateTimeOfArrival" : "2018-07-01T10:00:00.000+1:00",
"End" : "2018-07-07",
"EstimatedDateTimeOfDeparture" : "2018-07-07T13:00:00.000+1:00",
"ActualDateTimeOfDeparture" : "2018-07-07T12:00:00.000+1:00",
"Status" : "CheckedOut",
"Units" : [{
        "Start" : "2018-07-01",
        "End" : "2018-07-03",
        "ReservedUnitCount" : 1,
        "PhysicalUnitCount" : 1,
        "UnitType" : "Room",
        "BookedRoomTypeCode" : "DBL",
        "BookedRoomTypeName" : "Double",
        "BookedRoomCategoryCode" : "SUP",
        "BookedRoomCategoryName" : "Superior",
        "OccupiedRoomTypeCode" : "DBL",
        "OccupiedRoomTypeName" : "Double",
        "OccupiedRoomCategoryCode" : "SUP",
        "OccupiedRoomCategoryName" : "Superior",
        "IsForecasted" : true,
        "RoomNumber" : "15",
        "ExtraBeds" : [{
                "Type" : "Rollaway",
```

```
                "Count" : 1
            }
        ]
    }, {
        "Start" : "2018-07-04",
        "End" : "2019-07-06",
        "ReservedUnitCount" : 1,
        "PhysicalUnitCount" : 1,
        "UnitType" : "Room",
        "BookedRoomTypeCode" : "STE",
        "BookedRoomTypeName" : "Suite",
        "BookedRoomCategoryCode" : "SUP",
        "BookedRoomCategoryName" : "Superior",
        "OccupiedRoomTypeCode" : "STE",
        "OccupiedRoomTypeName" : "Suite",
        "OccupiedRoomCategoryCode" : "SUP",
        "OccupiedRoomCategoryName" : "Superior",
        "IsForecasted" : true,
        "RoomNumber" : "20",
        "ExtraBeds" : [{
                "Type" : "Rollaway",
                "Count" : 1
            }
        ]
    }
],
"Rates" : [{
        "Start" : "2018-07-01",
        "End" : "2018-07-03",
        "RatePlanCode" : "HOL",
        "RateDetails" : [{
                "RevenueType" : "Accommodation",
```

```
                "RevenueCode" : "Rooms",
                "Amount" : 120.00,
                "Taxes" : [{
                        "Type" : "VAT",
                        "Code" : "VAT 10%",
                        "Amount" : 12.00,
                        "IsIncluded" : true
                    }
                ]
            }, {
                "RevenueType" : "FoodAndBeverage",
                "RevenueCode" : "Breakfast",
                "Amount" : 20.00,
                "Taxes" : [{
                        "Type" : "VAT",
                        "Code" : "VAT 10%",
                        "Amount" : 2.00,
                        "IsIncluded" : true
                    }
                ]
            }
        ]
    }, {
        "Start" : "2018-07-04",
        "End" : "2019-07-06",
        "RatePlanCode" : "HOL",
        "RateDetails" : [{
                "RevenueType" : "Accommodation",
                "RevenueCode" : "Rooms",
                "Amount" : 160.00,
                "Taxes" : [{
                        "Type" : "VAT",
```

```
                    "Code" : "VAT 10%",
                    "Amount" : 16.00,
                    "IsIncluded" : true
                }
            ]
        }, {
            "RevenueType" : "Food&Beverage",
            "RevenueCode" : "Breakfast",
            "Amount" : 20.00,
            "Taxes" : [{
                    "Type" : "VAT",
                    "Code" : "VAT 10%",
                    "Amount" : 2.00,
                    "IsIncluded" : true
                }
            ]
        }

    ]
  }
],
"Fees" : [{
        "Start" : "2018-07-01",
        "End" : "2018-07-01",
        "feeDetails" : [{
                "RevenueType" : "Taxes",
                "RevenueCode" : "Other Taxes",
                "Code" : "City tax",
                "Amount" : 3.00,
                "IsIncluded" : false
            }
        ]
```

```
        }
    ],

    "RatePlans" : [{
            "Code" : "HOL",
            "Name" : "Holidays",
            "Description" : "Holidays offer 2018",
            "CategoryCode" : "OF18",
            "CategoryName" : "Offer 2018"

        }
    ],

    "Segementation" : {

        "Markets" : [{
                "Start" : "2018-07-01",
                "End" : "2018-07-06",
                "Code" : "INDLEI",
                "Name" : "Individual Leisure",
                "CategoryCode" : "IND",
                "CategoryName" : "Individual"
            }
        ],
        "Sources" : [{
                "Start" : "2018-07-01",
                "End" : "2018-07-06",
                "Code" : "OTA",
                "Name" : "Online Travel Agent",
                "CategoryCode" : "TA",
                "CategoryName" : "Travel Agent"
            }
```

```
    ],
    "Origins" : [{
            "Start" : "2018-07-01",
            "End" : "2018-07-06",
            "Code" : "CRS",
            "Name" : "Central Reservation System",
            "CategoryCode" : "DIST",
            "CategoryName" : "Distribution"
        }
    ]
},
"OccupancyDetails" : [{
        "Start" : "2018-07-01",
        "End" : "2018-07-06",
        "IsPerUnit" : true,
        "Occupants" : [{
                "Count" : 2,
                "Age" : null,
                "AgeQualifiyingCode" : "Adult"

            }
        ]
    }
],
"Guests" : [{
        "ID" : "GUEST-100000",
        "IsPrimary" : true,
        "CountryOfResidence" : "DE",
        "Nationality" : "US",
        "VIPlevelCode" : null,
        "LoyaltyDetails" : [{
                "ProgramCode" : "ALP",
```

```
                "ProgramType" : "Other",
                "LevelCode" : "ALP-123424-PO"
            }
        ]
    }
],
"SpecialRequests" : [{
        "ID" : "708708",
        "Code" : "X-P",
        "Name" : "Extra Pillow"
    }
],

"RoomAddons" : [{
        "Start" : "2018-07-01",
        "End" : "2018-07-06",
        "Code" : "BRK BT",
        "Description" : "Breakfast Buffet",
        "RateCode" : "HOL",
        "Quantity" : 2,
        "UnitPricings" : [{
                "RevenueType" : "FoodAndBeverage",
                "RevenueCode" : "Breakfast",
                "Amount" : 10.00,
                "Taxes" : [{
                        "Type" : "VAT",
                        "Code" : "VAT 10%",
                        "Amount" : 1.00,
                        "IsIncluded" : true
                    }
                ]
            }
```

```
            ]
        }
    ],

    "Additions" : [{
            "Start" : "2018-07-01",
            "End" : "2018-07-01",
            "Code" : "Ticket PP",
            "Description" : "Ticket Pool Party",
            "RateCode" : "HOL",
            "Quantity" : 2,
            "UnitPricings" : [{
                    "RevenueType" : "FoodAndBeverage",
                    "RevenueCode" : "Bar",
                    "Amount" : 50.00,
                    "Taxes" : [{
                            "Type" : "VAT",
                            "Code" : "VAT 10%",
                            "Amount" : 5.00,
                            "IsIncluded" : true
                        }
                    ]

                }, {
                    "RevenueType" : "Others",
                    "RevenueCode" : "Dj",
                    "Amount" : 10.00,
                    "Taxes" : [{
                            "Type" : "VAT",
                            "Code" : "VAT 10%",
                            "Amount" : 1.00,
                            "IsIncluded" : true
```

```
                                    }
                                ]
                            }
                        ]
                    }
                ],
                "Commisions" : [{
                        "Start" : "2018-07-01",
                        "End" : "2018-07-06",
                        "RefID" : "12G",
                        "CommissionableAmount" : {
                            "Amount" : 960.00,
                            "TaxInclusiveIndicator" : true,
                            "Percent" : 12,
                            "FlatCommissionAmount" : null ,
                            "CommissionPayableAmount" : null
                        }
                    }
                ]

            }
        ]
    }
]
}
```

4.3 BLOCKS

Data Element Table – Request

Element | @Attribute	Card in-ality	XML Only	Data Type	Description/Contents
HTNG_BlocksRQ	1			A collection of block data from where reservations are picked up
Blocks	1		Array	A collection of group blocks
Blocks/Block	1..n	X	Object	A single block in the collection of blocks
../Block/NotificationType	1		String Enumeration	An enumerated list used to specify the type of notification The available values are: • New • Updated • Deleted
../Block/BlockID	1		String	A unique identifier for the block
../Block/ConfirmationID	1		String	A block confirmation ID
../ Block /ExternalReferences	0..1		Array	A collection of external references
../ ExternalReferences/External Reference	1..n	X	object	An external reference is a means of identifying the reservation on other systems For example, the reservation that initiates within an OTA and then is transferred to a CRS. and finally to a PMS, may have different references for each of these three systems
../ExternalReference/ID	1		String	A string that uniquely identifies the system that uses the reference For example, the specific OTA
../ExternalReference/Name	1		String	Name of the external reference
../ExternalReference/IsPointOfSale	1		boolean	When true, the external reference is the source of sale
../ExternalReference/Type	0..1		string enumeration	Define the type of the profile if the external reference is a profile linked to the reservation

				Available value: • Customer • GDS • Corporatioin • TravelAgent • Wholesaler • Group • TourOperator • CRO • RepresentatiionCompany • InternetBroker • Airline • Hotel • CarRental • CruiseLine • Employee • EventHost • SupplierPartner • BillingContact • AuthorizedSigner • GeneralServiceContractor • Arranger • Association • TravelAgency
../ExternalReference/BlockID	0..1		String	The key that can be used to retrieve the related record in the source system
../Block/Code	0..1		String	A code that identifies the block
../Block/Name	1		String	The name of the block
../Block/Type	1		String Enumeration	An enumerated list used to specify the type of block: • Block • Allotment • Group
../Block/Status	1		String Enumeration	An enumerated list used to specify the status of the block; effects on revenue are dependent on your system and business practices The available values are:

				• Optional – Blocked rooms do not deduct from inventory • Strong Tentative – Blocked rooms deduct from inventory • Tentative – Blocked rooms deduct from inventory • Weak Tentative – Blocked rooms deduct from inventory • Definite – Confirmed rooms deduct from inventory • Cancelled – Restores inventory if previously deducted • Hold – Blocked rooms do not deduct from inventory • Loss – Blocked rooms do not deduct from inventory • Prospect – Blocked rooms do not deduct from inventory
../Block/Start	1		Date	The start date of the block; formatted using ISO 8601
../Block/End	1		Date	The end date of the block; formatted using ISO 8601
../Block/StartShoulderDuration	0..1		integer	Specifies the number of shoulder days prior to the block start date
../Block/EndShoulderDuration	0..1		integer	Specifies the number of shoulder days after the block end date
../Block/OptionDate	0..1		DateTime	The date the block will be released if not confirmed. Formatted using ISO 8601
../Block/CutoffDate	0..1		Object	Specifies when remaining rooms in the block will be released if not reserved
../CutoffDate/Date	0..1		Date	The date the remaining rooms in the block will be released if not reserved; formatted using ISO 8601
../CutoffDate/DaysBeforeStayDate	0..1		integer	This field allows for a dynamic cutoff date to be set This is particularly useful in the case where the block contains mini-blocks or sets of inventory within it, or where

				the block is a long-term block where reservations can be booked for any portion of the block
../Block/CreatedDateTime	1		DateTime	The date and time that the block was created; foratted using ISO 8601.
../Block/ModifiedDateTime	1		DateTime	The date and time that the block was last modified This field will contain the create date if the block has not been modified; formatted using ISO 8601
../Block/ModifiedBy	0..1		String	Specifies who last modified the block
../Block/CancellationBusinessDate	0..1		Date	The business date that the block was cancelled This field is required when the block is cancelled; formatted using ISO 8601
../Block/CancellationDateTime	0..1		DateTime	Real block cancellation date time This field is required when the block status is cancelled; formatted using ISO 8601
../Block/CancellationReason	0..1		String	Specifies the reason the block was cancelled
../Block/Details	0..1		Array	A collection of details about the block
../Details/Detail	1..n	X	Object	One detail item in the collection of block details
../Detail/RoomTypeCode	0,,1		String	Identifies a type of room for this block
../Detail/RoomTypeName	1		String	The name of the type of room
../Detail/RoomTypeCategoryCode	0..1		String	Specifies the category to which this room type belongs
../Detail/RoomTypeCategoryName	1		String	The name of the category to which this room type belongs
../Detail/UnitType	1		String	An enumerated list used to specify the type of unit The available values are: • SingleBedroom • DoubleBedroom • KingBedroom

				• QueenBedroom • TwinBedroom • TriipleBedroom • QuadrupleBedroom • FamilyRoom • JuniorSuite • Suite • LargeSuite • Parlour • Apartment • Penthouse • Studio • Condo • Loft • Bungalow • Villa • Cottage • Cabin • Lodge • Tent • Dormitory • Bed • RunOfHouse • Room • ConnectedRoom
../Detail/Units	1		Array	A collection of units
../Units/Unit	1..n	X	Object	One unit item in the collection of units
../Unit/Start	1		Date	Start date and time for this unit type within the block; formatted using ISO 8601
../Unit/End	1		Date	End date and time for this unit type within the block; formatted using ISO 8601
../Unit/RemainingBlockUnit	1		Integer	The number of this unit type remaining to sell within the block
../Unit/RemainingPhysicalUnit	1		Integer	The number of this unit type remaining to sell within the hotel
../Unit/PickedUpBlockUnit	1		Integer	The number of this unit type that has been sold within the block

../Unit/PickedUpPhysicalUnit	1		Integer	The number of this unit type that has been sold within the hotel
../Detail/RatePlans	1		Array	A collection of rate plans
../RatePlans/RatePlan	1..n	X	Object	One rate plan in an array of rate plans
../RatePlan/Start	1		Date	The start date for the rate plan for this group; formatted using ISO 8601
../RatePlan/End	1		Date	The end date for the rate plan for this group; formatted using ISO 8601
../RatePlan/Code	1		String	Identifier for the rate plan
../RatePlan/Name	1		String	The name of the rate plan
../RatePlan/Description	0..1		String	A description of the rate plan
../RatePlan/CategoryCode	0..1		String	A code identifying the category for which this rate plan belongs
../RatePlan/CategoryName	1		String	The name of the category for this rate plan
../Detail/Segmentation	0..1		Object	The business segmentation description of the block
../Segmentation/Markets	0..1		Array	An array of market information
../Markets/Market	1..n	X	Object	One market item in the array of market information
.. /Market/Start	1		Date	The start business date for which the values defined in the collection applies; formatted using ISO 8601
../Market/End	1		Date	The end business date for which the values defined in the collection applies; formatted using ISO 8601
../Market/Code	0..1		String	The market segment short name
../Market/Name	1		String	The market segment long name
../Market/CategoryCode	0..1		String	The market category short name
../Market/CategoryName	0..1		String	The market category long name
../Segmentation/Sources	0..1		Array	An array of sources
../Sources/Source	1..n	X	Object	One source in an array of sources
.. /Source/Start	1		Date	The start business date for which the values defined in the collection applies; formatted using ISO 8601

../ Source/End	1		Date	The end business date for which the values defined in the collection applies; formatted using ISO 8601
../ Source/Code	0..1		String	The source short name
../ Source/Name	1		String	The source long name
../ Source/CategoryCode	0..1		String	The source category short name
../ Source/CategoryName	0..1		String	The source category long name
../Segmentation/Origins	0..1		Array	An array of origins
../Origins/Origin	1..n	X	Object	One origin in an array of origins
.. /Origin/Start	1		Date	The start business date range for which the values defined in the array applies; formatted using ISO 8601
../ Origin/End	1		Date	The end business date range for which the values defined in the array applies formatted using ISO 8601
../ Origin/Code	0..1		String	The origin short name
../ Origin/Name	1		String	The origin long name
../ Origin/CategoryCode	0..1		String	The origin category short name
../ Origin/CategoryName	0..1		String	The origin category long name
../Detail/RevenueDetails	1		Array	An array of revenue details
../RevenueDetails/RevenueDetail	1..n	X	Object	One revenue detail in an array of revenue details
../RevenueDetail/Start	1		Date	The start business date range for which the values defined in the array applies; formatted using ISO 8601
../RevenueDetail/End	1		Date	The end business date range for which the values defined in the array applies; formatted using ISO 8601
../RevenueDetail/RevenueType	1		String / enum	An enumerated list that specifies the revenue type for the price item The available values are: • Accommodation • FoodAndBeverage • Taxes • Other
../RevenueDetail/RevenueCode	1		String	Revenue code associated to the rate

../RevenueDetail/RemainingRevenue	1		Object	The definition of the remaining revenue for the block generated by the room that have not been picked up yet
../ RemainingRevenue/Amount	1		Decimal	The amount of the remaining revenue allocated to the revenue code
../ RemainingRevenue/Taxes	1		Array	An array of taxes
../Taxes/Tax	1..n	X	Object	One tax in an array of taxes
../Tax/Type	1		String	Specifies the type of tax
../Tax/Code	1		String	Identifies the tax (city, VAT, etc.)
../Tax/Amount	1		Decimal	The amount of the tax
../Tax/IsIncluded	1		Boolean	When true, this tax is included in the remaining revenue amount
../ RevenueDetail/PickedUpRevenue/	1		Object	Details of the revenue produced by the rooms that have been picked up
../ PickedUpRevenue/Amount	1		Decimal	The amount of revenue produced by the rooms that have been picked up
../ PickedUpRevenue/Taxes	1		Array	An array of taxes
../Taxes/Tax	1..n	X	Object	One tax in an array of taxes
../Tax/Type	1		String	Specifies the type of tax
../Tax/Code	1		String	Identifies the tax (city, VAT, etc.)
../Tax/Amount	1		Decimal	The amount of the tax
../Tax/IsIncluded	1		Boolean	When true, this tax is included in the picked-up revenue amount
../Details/Detail/Fees	1		Array	An array of fees
../Fees/Fee	1..n	X	Object	One fee in an array of fees
../Fee/Start	1		Date	The start date for which the fee applies; formatted using ISO 8601
../Fee/End	1		Date	The end date for the fee; formatted using ISO 8601
../Fee/FeeDetails	1		Array	An array of fee details
../FeeDetails/FeeDetail	1..n	X	Object	One fee detail in an array of fee details
..FeeDetail/RevenueType	1		String	The revenue type for the price item

				The available values are: • Accommodation • FoodAndBeverage • Taxes • Other
..FeeDetail/RevenueCode	1		String	The revenue code for the fee
..FeeDetail/Code	1		String	A code that specifies the type of fee
..FeeDetail/Amount	1		Decimal	The amount of the fee
..FeeDetail/IsIncluded	1		Boolean	When true, this fee is included in the revenue amount
..FeeDetail/Taxes	1		Array	A collection of taxes
../Taxes/Tax	1..n	X	Object	One tax in an array of taxes
../Tax/Type	1		String	Specifies the type of tax
../Tax/Code	1		String	Identifies the tax (city, VAT, etc)
../Tax/Amount	1		Decimal	The amount of the tax
../Tax/IsIncluded	1		Boolean	When true, this tax is included in the revenue amount
../Details/Detail/RoomAddOns	0..1		Array	A collection of add-ons to the block; add-ons are by default included in the rate
../RoomAddOns/RoomAddOn	1..n	X	Object	One add-on item in the collection of add on items
../RoomAddOn/Start	1		Date	The start business date for which the values defined in the collection applies; formatted using ISO 8601
../RoomAddOn/End	1		Date	The end business date for which the values defined in the collection applies; formatted using ISO 8601
../RoomAddOn/Code	1		String	A code that specifies the type of add on
../RoomAddOn/Description	0..1		String	A description of the add on
../RoomAddOn/RateCode	1		String	The rate code of the add on
../RoomAddOn/RemainingQuantity	1		Integer	The quantity of the add on that is available
../RoomAddOn/PickedUpQuantity	1		Integer	The quantity of the add on that has been reserved
../RoomAddOn/UnitPricings	1		Array	An array of unit pricings

../UnitPricings/UnitPricing	1..n	X	Object	One unit pricing in an array of unit pricings
../UnitPricing/RevenueType	1		String	An enumerated list identifying the revenue type for the price item The available values are: • Accommodation • FoodAndBeverage • Taxes • Other
../UnitPricing/RevenueCode	1		String	The revenue code for the price item
../UnitPricing/Amount	1		Decimal	Amount of the price item
../UnitPricing/Taxes	1		Array	An array of taxes
../Taxes/Tax	1..n	X	Object	One tax in an array of taxes
../Tax/Type	1		String	Specifies the type of tax
../Tax/Code	1		String	Identifies the tax (city, VAT, etc.)
../Tax/Amount	1		Decimal	The amount of the tax
../Tax/IsIncluded	1		Boolean	When true, this tax is included in the unit price
../UnitPricing/ChargeUnit	1		String enumeration	Specifies the multiplier on the amount to calculate the total The enumerated list includes: • Per room per stay • Per room per stay • Per person per stay • Per person per night
../Details/Detail/Additions	0..1		Array	An array of additions
../Additions/Addition	1..n	X	Object	One addition in an array of additions
../Addition/Start	1		Date	The start business date for which the values defined in the collection applies; formatted using ISO 8601
../Addition/End	1		Date	The end business date for which the values defined in the collection applies; formatted using ISO 8601
../Addition/Code	1		String	A code identifying the type of addition
../Addition/Description	0..1		String	A description of the addition
../Addition/RateCode	1		String	The rate code for the addition

../Addition/RemainingQuantity	1		Integer	The quantity of the addition that is available for the block
../Addition/PickedUpQuantity	1		Integer	The quantity of the addition that has be reserved
../Addition/UnitPricings	1		Array	An array of unit pricings
../UnitPricings/UnitPricing	1..n	X	Object	One unit pricing in an array of unit pricings
../UnitPricing/RevenueType	1		String	The revenue type for the price item The available values are: • Accommodation • FoodAndBeverage • Taxes • Other
../UnitPricing/RevenueCode	1		String	The revenue code for the price item
../UnitPricing/Amount	1		Decimal	Amount of the price item
../UnitPricing/Taxes	1		Array	An array of taxes
../Taxes/Tax	1..n	X	Object	One tax in an array of taxes
../Tax/Type	1		String	Specifies the type of tax
../Tax/Code	1		String	Identifies the tax (city, VAT, etc).
../Tax/Amount	1		Decimal	The amount of the tax
../Tax/IsIncluded	1		Boolean	When true, this tax is included in the unit price
../UnitPricing/ChargeUnit	1		String enumeration	Specifies the multiplier on the amount to calculate the total The enumerated list includes: • Per room per stay • Per room per night • Per person per stay • Per person per night

4.3.1 Global Sample Message: XML

The following is a sample Block message in XML format:

```
<HTNG_BlocksNotifRQ xsi:schemaLocation="http://htng.org/2019A HTNG_BlocksNotifRQ.xsd"
xmlns="http://htng.org/2018B" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
    <Blocks>
        <Block>
            <NotificationType>New</NotificationType>
            <BlockID>896796969</BlockID>
            <ConfirmationID>69870707</ConfirmationID>
            <ExternalReferences>
                <ExternalReference>
                    <ID>17644897</ID>
                    <Name>ARTE Travel</Name>
                    <IsPointOfSale>true</IsPointOfSale>
                    <Type>TravelAgent</Type>
                    <BlockID>696969-1</BlockID>
                </ExternalReference>
            </ExternalReferences>
            <Code>XG18</Code>
            <Name>Xmas Group 18</Name>
            <Type>Group</Type>
            <Status>Definite</Status>
            <Start>2018-12-20</Start>
            <End>2018-12-30</End>
            <OptionDate>2018-12-01</OptionDate>
            <CreatedDateTime>2017-12-01T09:30:47Z</CreatedDateTime>
            <ModifiedDateTime>2017-12-01T09:30:47Z</ModifiedDateTime>
            <ModifiedBy>PMS</ModifiedBy>
            <Details>
                <Detail>
                    <RoomTypeCode>DBL</RoomTypeCode>
                    <RoomTypeName>Room</RoomTypeName>
                    <RoomTypeCategoryCode>DBL</RoomTypeCategoryCode>
                    <RoomTypeCategoryName>DBL</RoomTypeCategoryName>
                    <UnitType>Room</UnitType>
                    <Units>
                        <Unit>
                            <Start>2018-12-20</Start>
                            <End>2018-12-30</End>
                            <RemainingBlockUnit>9</RemainingBlockUnit>
                            <RemainingPhysicalUnit>9</RemainingPhysicalUnit>
                            <PickedUpBlockUnit>1</PickedUpBlockUnit>
                            <PickedUpPhysicalUnit>1</PickedUpPhysicalUnit>
                        </Unit>
                    </Units>
                    <RatePlans>
```

```
        <RatePlan>
            <Start>2018-12-20</Start>
            <End>2018-12-30</End>
            <Code>GROUPBB</Code>
            <Name>GROUPBB</Name>
            <Description>Special group rate</Description>
            <CategoryCode>GROUPBB</CategoryCode>
            <CategoryName>GROUPBB</CategoryName>
        </RatePlan>
    </RatePlans>
    <Segmentation>
        <Markets>
            <Market>
                <Start>2018-12-20</Start>
                <End>2018-12-30</End>
                <Code>DE</Code>
                <Name>DE</Name>
                <CategoryCode>DE</CategoryCode>
                <CategoryName>DE</CategoryName>
            </Market>
        </Markets>
        <Sources>
            <Source>
                <Start>2018-12-20</Start>
                <End>2018-12-30</End>
                <Code>ON</Code>
                <Name>ON</Name>
                <CategoryCode>ON</CategoryCode>
                <CategoryName>ON</CategoryName>
            </Source>
        </Sources>
        <Origins>
            <Origin>
                <Start>2018-12-20</Start>
                <End>2018-12-30</End>
                <Code>ON</Code>
                <Name>ON</Name>
                <CategoryCode>ON</CategoryCode>
                <CategoryName>ON</CategoryName>
            </Origin>
        </Origins>
    </Segmentation>
    <RevenueDetails>
        <RevenueDetail>
            <Start>2018-12-20</Start>
            <End>2018-12-30</End>
            <RevenueType>Accommodation</RevenueType>
            <RevenueCode>Room only</RevenueCode>
            <RemainingRevenue>
```

```
            <Amount>2000.00</Amount>
            <Taxes>
               <Tax>
                  <Type>VAT</Type>
                  <Code>VAT 10%</Code>
                  <Amount>200.00</Amount>
                  <IsIncluded>true</IsIncluded>
               </Tax>
            </Taxes>
         </RemainingRevenue>
         <PickedUpRevenue>
            <Amount>200.00</Amount>
            <Taxes>
               <Tax>
                  <Type>VAT</Type>
                  <Code>VAT 10%</Code>
                  <Amount>20.00</Amount>
                  <IsIncluded>true</IsIncluded>
               </Tax>
            </Taxes>
         </PickedUpRevenue>
      </RevenueDetail>
      <RevenueDetail>
         <Start>2018-12-20</Start>
         <End>2018-12-30</End>
         <RevenueType>FoodAndBeverage</RevenueType>
         <RevenueCode>Breakfast</RevenueCode>
         <RemainingRevenue>
            <Amount>2000.00</Amount>
            <Taxes>
               <Tax>
                  <Type>VAT</Type>
                  <Code>VAT 10%</Code>
                  <Amount>200.00</Amount>
                  <IsIncluded>true</IsIncluded>
               </Tax>
            </Taxes>
         </RemainingRevenue>
         <PickedUpRevenue>
            <Amount>200.00</Amount>
            <Taxes>
               <Tax>
                  <Type>VAT</Type>
                  <Code>VAT 10%</Code>
                  <Amount>20.00</Amount>
                  <IsIncluded>true</IsIncluded>
               </Tax>
            </Taxes>
         </PickedUpRevenue>
```

```
        </RevenueDetail>
    </RevenueDetails>
    <Fees>
        <Fee>
            <Start>2001-12-17</Start>
            <End>2001-12-17</End>
            <FeeDetails>
                <FeeDetail>
                    <RevenueType>Taxes</RevenueType>
                    <RevenueCode>Other Taxes</RevenueCode>
                    <Code>City tax</Code>
                    <Amount>3.00</Amount>
                    <IsIncluded>false</IsIncluded>
                </FeeDetail>
            </FeeDetails>
        </Fee>
    </Fees>
    <RoomAddOns>
        <RoomAddOn>
            <Start>2018-12-20</Start>
            <End>2018-12-30</End>
            <Code>Breakfast Buffet</Code>
            <Description>Breakfast Buffet</Description>
            <RateCode>GroupBB</RateCode>
            <RemainingQuantity>10</RemainingQuantity>
            <PickedUpQuantity>1</PickedUpQuantity>
            <UnitPricings>
                <UnitPricing>
                    <RevenueType>FoodAndBeverage</RevenueType>
                    <RevenueCode>Breakfast</RevenueCode>
                    <Amount>10.00</Amount>
                    <Taxes>
                        <Tax>
                            <Type>VAT</Type>
                            <Code>VAT 10%</Code>
                            <Amount>1.00</Amount>
                            <IsIncluded>true</IsIncluded>
                        </Tax>
                    </Taxes>
                    <ChargeUnit>Per person per night</ChargeUnit>
                </UnitPricing>
            </UnitPricings>
        </RoomAddOn>
    </RoomAddOns>
    <Additions>
        <Addition>
            <Start>2018-12-20</Start>
            <End>22018-12-30</End>
            <Code>Ticket PP</Code>
```

```
                        <Description>Pool Party Package</Description>
                        <RateCode>GroupBB</RateCode>
                        <RemainingQuantity>10</RemainingQuantity>
                        <PickedUpQuantity>1</PickedUpQuantity>
                        <UnitPricings>
                            <UnitPricing>
                                <RevenueType>FoodAndBeverage</RevenueType>
                                <RevenueCode>Bar</RevenueCode>
                                <Amount>50.00</Amount>
                                <Taxes>
                                    <Tax>
                                        <Type>VAT</Type>
                                        <Code>VAT 10%</Code>
                                        <Amount>5.00</Amount>
                                        <IsIncluded>true</IsIncluded>
                                    </Tax>
                                </Taxes>
                                <ChargeUnit>Per person per stay</ChargeUnit>
                            </UnitPricing>
                            <UnitPricing>
                                <RevenueType>Other</RevenueType>
                                <RevenueCode>DJ</RevenueCode>
                                <Amount>10.00</Amount>
                                <Taxes>
                                    <Tax>
                                        <Type>VAT</Type>
                                        <Code>VAT 10%</Code>
                                        <Amount>1.00</Amount>
                                        <IsIncluded>true</IsIncluded>
                                    </Tax>
                                </Taxes>
                                <ChargeUnit>Per person per stay</ChargeUnit>
                            </UnitPricing>
                        </UnitPricings>
                    </Addition>
                </Additions>
            </Detail>
        </Details>
    </Block>
</Blocks>
</HTNG_BlocksNotifRQ>    </Blocks>
</HTNG_BlocksNotifRQ>
```

4.3.2 Global Sample Message: JSON

The following is a sample Block message in JSON format:


```
{
    "Blocks" : [{
            "NotificationType" : "New",
            "BlockID" : "896796969",
            "ConfirmationID" : "69870707",
            "ExternalReferences" : [{
                    "ID" : "17644897",
                    "Name" : "ARTE Travel",
                    "IsPointOfSale" : true,
                    "Type" : "TravelAgent",
                    "BlockID" : "696969-1"
                }
            ],
            "Code" : "HOL18",
            "Name" : "Holidays 18",
            "Type" : "Group",
            "Status" : "Definite",
            "Start" : "2018-07-01",
            "End" : "2018-07-06",
            "StartShoulderDuration" : null ,
            "EndShoulderDuration" : null,
            "OptionDate" : "2018-06-01",
            "CutOffDate" : {
                "Date" : null,
                "DaysBeforeStayDate" : null
            },
            "CreatedDateTime" : "2017-12-01T13:36:47.550+1:00",
            "ModifiedDateTime " : "2017-12-10T13:36:47.550+1:00",
            "ModifiedBy" : "PMS",
            "CancellationBusinessDate" : null,
            "CancellationDateTime" : null,
            "CancellationReason" : null,
            "Details": [{
                    "RoomTypeCode" : "DBL",
                    "RoomTypeName" : "Double",
                    "RoomTypeCategoryCode" : "SUP",
                    "RoomTypeCategoryName" : "Superior",
                    "UnitType" : "Room",
```

```
"Units": [{
        "Start" : "2018-07-01",
        "End" : "2018-07-07",
        "RemainingBlockUnit" : 9,
        "RemainingPhysicalUnit" : 9,
        "PickedUpBlockedUnit" : 1,
        "PickedPhysicalUnit" : 1
    }
],
"RatePlans": [{
        "Start" : "2018-07-01",
        "End" : "2018-07-07",
        "Code" : "HOL",
        "Name" : "Holidays",
        "Description" : "Holidays offer 2018",
        "CategoryCode" : "OF18",
        "CategoryName" : "Offer 2018"
    }
],
"Segementation": {

    "Markets": [{
            "Start" : "2018-07-01",
            "End" : "2018-07-06",
            "Code" : "INDLEI",
            "Name" : "Individual Leisure",
            "CategoryCode" : "IND",
            "CategoryName" : "Individual"
        }
    ],
    "Sources": [{
            "Start" : "2018-07-01",
            "End" : "2018-07-06",
            "Code" : "OTA",
            "Name" : "Online Travel Agent",
            "CategoryCode" : "TA",
            "CategoryName" : "Travel Agent"
        }
    ],
    "Origins": [{
            "Start" : "2018-07-01",
            "End" : "2018-07-06",
```

```
            "Code" : "CRS",
            "Name" : "Central Reservation System",
            "CategoryCode" : "DIST",
            "CategoryName" : "Distribution"
        }
    ]
},

"Revenuedetails" : [{
        "Start" : "2018-07-01",
        "End" : "2018-07-03",
        "RevenueType" : "Accommodation",
        "RevenueCode" : "Room only",
        "RemainingRevenue" : {
            "Amount" : 1080.00,
            "Taxes" : [{
                    "Type" : "VAT",
                    "Code" : "VAT 10 %",
                    "Amount" : 108.00,
                    "IsIncluded" : true
                }
            ]
        },
        "PickedUpRevenue" : {
            "Amount" : 120.00,
            "Taxes" : [{
                    "Type" : "VAT",
                    "Code" : "VAT 10 %",
                    "Amount" : 12.00,
                    "IsIncluded" : true
                }
            ]
        }
    }, {
        "Start" : "2018-07-04",
        "End" : "2018-07-06",
        "RevenueType" : "Accommodation",
        "RevenueCode" : "Room only",
        "RemainingRevenue" : {
            "Amount" : 1440.00,
            "Taxes" : [{
                    "Type" : "VAT",
```

```
                "Code" : "VAT 10 %",
                "Amount" : 144.00,
                "IsIncluded" : true
            }
        ]
    },
    "PickedUpRevenue" : {
        "Amount" : 160.00,
        "Taxes" : [{
                "Type" : "VAT",
                "Code" : "VAT 10 %",
                "Amount" : 16.00,
                "IsIncluded" : true
            }
        ]
    }
}, {
    "Start" : "2018-07-01",
    "End" : "2018-07-06",
    "RevenueType" : "FoodAndBeverage",
    "RevenueCode" : "Breakfast",
    "RemainingRevenue" : {
        "Amount" : 180.00,
        "Taxes" : [{
                "Type" : "VAT",
                "Code" : "VAT 10 %",
                "Amount" : 18.00,
                "IsIncluded": true
            }
        ]
    },
    "PickedUpRevenue" : {
        "Amount": 20.00,
        "Taxes": [{
                "Type" : "VAT",
                "Code" : "VAT 10 %",
                "Amount" : 2.00,
                "IsIncluded" : true
            }
        ]
    }
}
```

```
],

"Fees" : [{
        "Start" : "2018-07-01",
        "End" : "2018-07-01",
        "FeeDetails" : [{
                "RevenueType" : "Taxes",
                "RevenueCode" : "Other Taxes",
                "Code" : "City Tax",
                "Amount" : 3.00,
                "IsIncluded" : false
            }
        ]
    }
],
"RoomAddons" : [{
        "Start" : "2018-07-01",
        "End" : "2018-07-06",
        "Code" : "Breakfast Buffet",
        "Description" : "Breakfast Buffet",
        "RateCode" : "HOL",
        "UnitPricings" : [{
                "RevenueType" : "FoodAndBeverage",
                "RevenueCode" : "Breakfast",
                "Amount" : 10.00,
                "Taxes" : [{
                        "Type" : "VAT",
                        "Code" : "VAT 10 %",
                        "Amount" : 1.00,
                        "IsIncluded" : true
                    }
                ],
                "ChargeUnit" : "Per person per stay"
            }
        ]
    }
],
"Additions" : [{
        "Start" : "2018-07-01",
        "End" : "2018-07-01",
        "Code" : "Ticket PP",
        "Description" : "Pool Party Package",
```

```
                    "RateCode" : "HOL",
                    "UnitPricings" : [{
                            "RevenueType" : "FoodAndBeverage",
                            "RevenueCode" : "Bar",
                            "Amount" : 50.00,
                            "Taxes" : [{
                                    "Type" : "VAT",
                                    "Code" : "VAT 10 %",
                                    "Amount" : 5.00,
                                    "IsIncluded" : true
                                }
                            ],
                            "ChargeUnit" : "Per person per stay"
                        }, {
                            "RevenueType" : "Other",
                            "RevenueCode" : "Dj",
                            "Amount" : "10",
                            "Taxes" : [{
                                    "Type" : "VAT",
                                    "Code" : "VAT 10 %",
                                    "Amount" : 1.00,
                                    "IsIncluded" : true
                                }
                            ],
                            "ChargeUnit" : "Per person per stay"
                        }
                    ]
                }
            ],
        }
    ]
  }
}
```

5 IMPLEMENTATION NOTES

This section covers models for data extraction, data communication and some notes to ensure consistent use of JSON when used for extraction.

5.1 EXTRACTING THE DATA

The purpose of the Business Analytic Transactional Extract is to create a standard set of structures that can be used to collect information from various hotel systems to use for analytics. This is an example of the Canonical Data Model pattern. In an ideal world, the core business systems including the Property Management System (PMS), the Central Reservation System (CRS) and the Point of Sales (POS) system would provide a method to automatically extract the data in the target formats in a direct data extract that could be loaded into the analytics system.

In the meantime, the following paragraphs discuss practical means of collecting the transaction data. Some of the strategies that follow are based on well-known Patterns for Enterprise Integration.

5.1.1 Message Capture via Proxy (Wiretap Pattern)

This capture method places a proxy between a message source like a CRS and a message target like the PMS. The proxy captures messages as they arrive and then copies the message to the extract stream and also sends the message to the intended destination. The messages in the extract stream can be sent to a service endpoint, stored for later transformation and processing, or can be transformed and directly sent and loaded into an analytic system.

5.1.2 Event Notification – Publish and Subscribe

Some systems support a notification model allowing subscribers to receive a message each time an event occurs, such as an update to a reservation. This solution uses a message end-point to receive the notifications as they are generated. The notifications can be stored for later transformation and processing or can be transformed and directly sent and loaded into an analytic system.

5.1.3 Polling Consumer

Event Polling is similar to an event notification except the event source is polled to determine and collect any events that have occurred since the previous request. Event messages may be grouped or sent individually.

5.1.4 Direct Read

The direct read strategy directly reads the data stored in the database. The data is extracted by reading or querying the storage file or database to find all new, modified or deleted records since the previous read. This typically requires that rows have either a generation column or a time and date stamp. This also requires the understanding of the data and table structures and may require multiple queries or joins to extract all of the required information. The extract can then be transformed and loaded to the analytics system.

5.1.5 Data or Transaction Log Read

It may not be possible to directly read from a live transaction-based system; however, many data storage systems generate transaction logs as data is modified in the database. These transaction records can often be used to capture the changes to the underlying database. This method reads and extracts data from the transaction or other logs which requires knowledge of the structure of the log files. The extracted data can then be sent, transformed and loaded into the analytics system.

5.1.6 Report Scanning

Most systems have an ability to generate reports detailing the transactions that have occurred during a period of time - many systems even offer the opportunity to create custom reports. These reports can be scanned and parsed to extract the data from the reports to provide the data needed for the analytics system.

5.1.7 Communication Method

Once data has been extracted this document does not specify how the data is transferred to other systems. There is no single right way to do this and we suggest that the reader considers the facilities covered in the HTNG Event Notification and Bulk Data API Specifications. Both specifications support a subscription model allowing different systems to subscribe to the information they need. These systems can receive the information directly or be notified when there is information available to read.

It is recommended to use standard web protocols for the actual transfer of the data. We suggest that the secure versions of these protocols should be used over the insecure versions. For events, notifications or single messages, we suggest the HTTPS or SOAP over HTTP protocols. For large file or batch transfers, we suggest the SSH-related SFTP or SCP protocols or the Secure FTP protocol.

The current best practice is to only use the secure versions of the protocols, which are the ones we have listed. You are of course free to go your own direction and decide to use proprietary protocols, message queuing systems, or other means of communications, but we feel these add complexity and make integration more difficult.

5.1.8 JSON Format Specifics

Specific guidance for JSON implementations:

- Required fields CANNOT be EMPTY or NULL
- Optional NUMERIC fields CAN be NULL but NOT EMPTY
- Optional fields DATE fields CAN be NULL but not EMPTY
- Optional STRING fields CAN be EMPTY but not NULL

6 Outlook

Due to the volume of messaging applicable to analytics, the Business Analytics Transactional Extract Workgroup decided to create the standards in phases, allowing for the specifications to be implemented as they are completed and published. The standard you are reading is the first phase and covers Financial Transactions, Reservations and Group Blocks. As of March 27, 2019, Phase II is in progress to create messaging for Point of Sale both Front of House and Back of House. It is the team's intent to re-charter at the completion of the second phase for a third phase to create Profile and Guest Request messaging.