ONE Record Data Model
December 2022

Legend
- Air core ontology
- Common objects
- CO2 Emissions
- Dangerous Goods
- Distribution
- Connected Devices
- ACI
- Live Animals

- * Mandatory elements
- *Reference to logistic or common object*
- (n) multiple elements / arrays

Supertype ○—< Subtype

Naming convention
- Avoid usage of underscore "_"
- An object name begins with an upper case
- An attribute name begins with a lower case

MovementTimes
MovementTimesURI
- timeType: string
- direction: string (Inbound, Outbound)
- movementTimestamp: dateTime
- movementMilestone: string

TransportMeans
TransportMeansURI
- transportCompany: Company
- vehicleType: string
- vehicleModel: string
- vehicleRegistration: string
- vehicleSize: string
- typicalFuelConsumption: Value
- transportSegment: TransportSegment
- typicalCO2Coefficient: Value

CO2Emissions
CO2EmissionsURI
- calculatedEmissions: Value
- methodName: string
- methodVersion: string

TransportMovement
TransportSegmentURI
- *movementType: string (Actual / Planned)*
- *segmentLevel: string (Contractual, flight leg,...)*
- modeCode: string
- departureLocation: Location
- arrivalDate: dateTime
- arrivalLocation: Location
- departureDate: dateTime
- transportIdentifier: string
- seal: string
- distanceMeasured: Value
- distanceCalculated: Value
- movementTimes (n): MovementTimes
- transportMeans: TransportMeans
- transportMeansOperator (n): Person
- fuelType: string
- fuelAmountMeasured: Value
- fuelAmountCalculated: Value
- payload: Value
- CO2Emissions: CO2Emissions
- transportedUlds (n): ULD
- transportedPieces (n): Piece
- externalReferences (n): ExternalReference
- events (n): Event
- modeQualifier: string

ULD
ULDURI
- uldTypeCode: string
- serialNumber: string
- ownerCode: string
- ataDesignator: string
- loadingIndicator: string
- tareWeight: Value
- uldSealNumber: string
- damageTag: string
- demurrageCode: string
- ServiceabilityCode: string
- odinCode: string
- nbNets: integer
- nbDoors: integer
- nbFittings: integer
- nbStraps: integer
- uldRemarks: string
- transportMovement (n): TransportMovement
- externalReference (n): ExternalReference
- events (n): Event
- upid: Piece

Insurance
InsuranceURI
- coveringParty: Company
- insuranceAmount: string
- insuredShipment: Shipment
- nvdIndicator: boolean

Shipment
ShipmentURI
- containedPieces (n): Piece
- goodsDescription: string
- totalPieceCount: integer
- totalSLAC: integer
- totalGrossWeight *: Value
- volumetricWeight * (n): VolumetricWeight
- dimensions (n): Dimensions
- incoterms: string
- deliveryLocation: Location
- deliveryDate: dateTime
- weightValuationIndicator: string
- otherChargesIndicator: string
- insurance: Insurance
- externalReference (n): ExternalReference
- quoteRequest (n): BookingOptionRequest
- events (n): Event
- parties (n): Party
- shipper: Company
- forwarder: Company

Waybill
WaybillURI
- * waybillNumber: string
- waybillPrefix: string
- containedWaybill (n): Waybill
- waybillType: string (Direct, House or Master)
- destinationCharges: double
- destinationCurrencyCode: string
- destinationCurrencyRate: double
- originCurrency: string
- optionalShippingRefNo: string
- optionalShippingInfo: string
- booking: BookingOption
- accountingInformation: string
- consignorDeclarationSignature: string
- carrierDeclarationPlace: Location
- carrierDeclarationDate: dateTime
- carrierDeclarationSignature: string
- customsOriginCode: string

Booking
BookingURI
- * waybillNumber: Waybill
- bookingStatus: string
- bookingRequest: BookingRequest
- similar to BO

BookingRequest
bookingRequestURI
- * bookingOption: BookingOption
- booking: Booking

BillingDetails
BillingDetailsURI
- waybill: Waybill
- vatIndicator: boolean
- awbUseIndicator: string (R/V/S)
- commissionIndicator: boolean
- commissionIndicator: boolean
- commission: double
- exchangeRate: double
- discount: double
- taxDueAirline: Value
- taxDueAgent: Value
- awbDeliveryDate: dateTime
- awbAcceptanceDate: dateTime
- awbExecutionDate: dateTime
- nbCorrections: integer
- adjustments (n): Adjustments

BookingOption
BookingOptionURI
- bookingOptionStatus: string (tbd)
- waybillNumber: Waybill
- parties (n): Party
- carrier: Carrier
- bookingSegment: BookingSegment
- carrierProductInfo (n): CarrierProduct
- price: Price
- routing: Routing
- bookingTimes: BookingTimes
- units (n): string
- requestMatchInd: boolean
- shipmentSecurityStatus: string (SCR / NSC)
- requestRef: BookingOptionRequest
- offerValidFrom: dateTime
- offerValidTo: dateTime
- event (n): Event

BookingSegment
BookingSegmentURI
- * departureLocation: Location
- * arrivalLocation: Location
- preferredTransportId: string
- bookingOptions (n): BookingOption
- requests (n): BookingOptionRequest
- scheduledLegs (n): ScheduledLegs

ScheduledLegs
ScheduledLegsURI
- sequenceNumber: integer
- arrivalDate: dateTime
- arrivalLocation: Location
- departureDate: dateTime
- departureLocation: Location
- transportId: string

BookingOptionRequest
BookingOptionRequestURI
- * bookingSegment: BookingSegment
- bookingOptions (n): BookingOption
- * parties (n): Party
- * unitsPreference (n): string
- timePreferences: BookingTimes
- routingPreferences: Routing
- ratingsPreferences: Ratings
- * shipmentDetails: BookingShipment
- allotment: string
- carrierProduct: CarrierProduct

BookingTimes
BookingTimesURI
- earliestAcceptanceTime: dateTime
- latestAcceptanceTime: dateTime
- timeOfAvailability: dateTime
- totalTransitTime: dateTime
- latestArrivalTime: dateTime

CarrierProduct
CarrierProductURI
- productCode: string
- productDescription: string

Routing
RoutingURI
- maxConnections: integer
- aircraftPossibilityCode: string
- rfsInd: boolean
- onlineInd: boolean
- excludedViaPoints (n): Location

BookingShipment
BookingShipmentURI
- goodsDescription: string
- requestedHandling: HandlingInstructions
- * totalGrossWeight *: Value
- * dimensions (n): Dimensions
- volumetricWeight: VolumetricWeight
- loadType: string
- totalPieceCount: integer

Price
PriceURI
- grandTotal: Value
- ratings (n): Ratings
- carrierChargeCode: string
- bookingOption: BookingOption

VolumetricWeight
Vweight_URI
- conversionFactor: Value
- chargeableWeight: Value

Dimensions
DimsURI
- width: Value
- length: Value
- height: Value
- volume: Value

Geolocation
GeolocURI
- latitude: double
- longitude: double
- elevation: Value
- geolocationUnit: string

Address
AddressURI
- street (n): string
- poBox: string
- postalCode: string
- cityCode: string
- cityName: string
- regionCode: string
- regionName: string
- addressCodeType: string
- addressCode (n): string
- country: Country

Person
PersonURI
- contactType: string
- salutation: string
- firstName: string
- middleName: string
- lastName: string
- jobTitle: string
- department: string
- employeeID: string
- contactDetails (n): Contact
- documents (n): ExternalReference

Contact
ContactURI
- contactType: string
- contactValue: string

Country
CountryURI
- countryCode: string
- countryName: string

Location
LocURI
- locationType: string
- code: string
- name: string
- geolocation: Geolocation
- address: Address

Party
PartyURI
- partyRole: string
- partyDetails: Company

Value
ValueURI
- value: string
- unit: string

OtherIdentifier
OtherIDURI
- otherIdentifierType: string
- identifier: string

ExternalReference
External_refURI
- documentType: string
- documentName: string
- documentOriginator: Company
- documentID: string
- documentVersion: string
- documentLink: string
- documentChecksum: string
- documentLocation: Location
- validFrom: dateTime
- expiryDate: dateTime

ItemDg
ItemURI
- supplementaryInfoPrefix: string
- supplementaryInfoSuffix: string
- netWeightMeasure: Value
- reportableQuantity: Value
- emergencyContact: Person

Item
ItemURI
- product *: Product
- quantity: VALUE
- otherIdentifier (n): OtherIdentifier
- unitPrice: Value
- quantityForUnitPrice: double
- weight: Value
- dimensions: Dimensions
- batchNumber: string
- lotNumber: string
- productExpiryDate: dateTime
- productionDate: dateTime
- productionCountry: Country
- targetCountry: Country
- isInPiece: Piece
- events (n): Event

Characteristics
CharacteristicsURI
- characteristicsType: string
- value: string

Product
ProductURI
- manufacturer: Company
- productDescription: string
- productIdentifier: string
- otherIdentifier (n): OtherIdentifier
- characteristics (n): Characteristics
- commodityName: string
- hsCode: string
- hsType *: string
- hsCommodityName *: string
- hsCommodityDescription *: string
- commodityItemNumber: string

PackagingType
PackagingTypeURI
- typeCode: string
- packagingTypeDescription: string

Piece
PieceURI
- containedPiece (n): Piece
- uldReference: ULD
- transportMovement (n): TransportMovement
- containedItems (n): Item
- shipment: Shipment
- uPID: string
- loadType: string (Bulk or ULD)
- goodsDescription *: string
- product: Product
- slac: integer
- volumetricWeight *: VolumetricWeight
- grossWeight *: Value
- dimensions: Dimensions
- coload: boolean
- stackable: boolean
- turnable: boolean
- productionCountry (n): Country
- parties (n): Party
- externalReference (n): ExternalReference
- otherIdentifier (n): OtherIdentifier
- packagingType: PackagingType
- securityDeclaration: SecurityDeclaration
- handlingInstructions (n): HandlingInstructions
- shippingMarks: string
- packageMarkCoded: string
- packagedeIdentifier: string
- customsInfo: CustomsInfo
- declaredValueforCustoms: Value
- nvdForCustoms: boolean
- declaredValueForCarriage: Value
- nvdForCarriage: boolean
- events (n): Event

SecurityDeclaration
SecurityDeclarationURI
- regulatedEntityIssuer: RegulatedEntity
- securityStatus: string
- receivedFrom: RegulatedEntity
- screeningMethod (n): string
- groundsForExemption (n): string
- otherScreeningMethods (n): string
- issuedBy: Person
- issuedOn: dateTime
- otherRegulatedEntity (n): RegulatedEntity
- additionalSecurityInformation: string
- piece: Piece

HandlingInstructions
HandlingInstructionsURI
- serviceType: string
- serviceTypeCode: string
- serviceDescription: string
- requestedBy: Person

RegulatedEntity
REURI
- entity: Branch
- regulatedEntityCategory: string (RA, KC, AO)
- regulatedEntityIdentifier: string
- expiryDate: dateTime

CustomsInfo
CustomsInfoURI
- customsInfoCountryCode: string
- customsInfoNote: string
- customsInfoContentCode: string
- customsInformation: string
- customsInfoSubjectCode: string

Ratings
RatingsURI
- priceSpecification: e.g. Street/Group/Spot etc
- priceSpecificationRef: string
- chargeType: string e.g. Freight / Surcharges
- chargePaymentType: string (P,C)
- chargeCode: string (CL 1.1)
- otherChargeCode: string (CL 1.2)
- chargeDescription: enum e.g. Airfreight / Fuel
- billingChargeIdentifier: string (CL 1.33)
- subTotal: Value
- rcp: string
- entitlement: string (A,C)
- quantity: string
- ranges (n): Ranges

Ranges
RangesURI
- rateClassCode: string e.g. Q
- ratingType: enum uldRatingType
- ratingType: enum uldRatingType
- unitBasis: string e.g. Chargeable Weight
- scr: SpecificCommodityCode/ Commodity
- minimumQuantity: int
- maximumQuantity: int
- amount: double

ProductDg
ProductURI
- unNumber: string
- technicalName: string
- properShippingName: string
- explosiveCompatibilityGroupCode: string
- packagingDangerLevelCode: string
- packingInstructionNumber: string
- hazardClassificationId: string
- additionalHazardClassificationId: string
- specialProvisionId: string
- authorizationInformation: string
- dgRadioactiveMaterial (n): DgProductRadio

Event
EventURI
- eventTypeIndicator *: string
- dateTime *: dateTime
- eventCode: string
- eventName: string
- performedBy: Company
- location: Location
- linkedObject: LogisticObject
- performedByPerson: Person

EventUld
EventURI
- loadingPosition: string

Company
CompanyURI
- iATACargoAgentCode: string
- branch: CompanyBranch
- companyName: string

Carrier
CompanyURI
- carrierName: string
- carrierShortName: string
- airlineCode: string
- airlinePrefix: string

CompanyBranch
CompanyBranchURI
- branchName: string
- iATACargoAgentLocationIdentifier: string
- otherIdentifiers (n): OtherIdentifier
- location: Location
- contactPersons (n): Person

DgRadioactiveIsotope
DgRaIsotopeURI
- isotopeId: string
- isotopeName: string
- activityLevelMeasure: string
- physicalChemicalForm: string
- specialFormIndicator: boolean
- criticalitySafetyIndexNumeric: double
- lowDispersibleIndicator: boolean

DgProductRadioactive
DgProductRadioactiveURI
- dgRaTypeCode: string
- transportIndexNumeric: integer
- fissileExceptionIndicator: boolean
- fissileExceptionReference: string
- isotopes (n): DgRadioactiveIsotope

PieceDg
PieceURI
- allPackedInOneIndicator: boolean
- qValueNumeric: double
- overpackIndicator: boolean
- overpackTypeCode: string
- overpackCriticalitySafetyIndexNumeric: string
- overpackT1: string
- dgDeclaration (n): DgDeclaration

DgDeclaration
DgDeclarationURI
- shipperDeclarationText: string
- handlingInformation: string
- exclusiveUseIndicator: boolean
- aircraftLimitationInformation: string
- complianceDeclarationText: string

PieceLiveAnimals
PieceURI
- specificContainerNb: integer
- speciesScientificName: string
- speciesCommonName: string
- specimenDescription: string
- specimenTypeCode: string
- quantityAnimals: integer
- exportTradeCountry: Country
- originTradeCountry: Country
- acquisitionDatetime: dateTime
- annualQuotaQuantity: integer
- categoryCode: string
- goodsTypeCode: string
- goodsTypeExtensionCode: integer
- associatedEpermit: EPermitConsignment
- originReferencePermitDatetime: dateTime
- originReferencePermitId: string
- originReferencePermitTypeCode: string

EpermitConsignment
EpermitConsignmentURI
- consignmentItems: PieceLiveAnimals
- examiningQuantity: Value
- usedToDateQuantity: integer

LiveAnimalsEpermit
LiveAnimalsEpermitURI
- consignments (n): EpermitConsignment
- permitNumber: string
- permitTypeCode: string
- permitTypeOther: boolean
- permitValidFrom: dateTime
- permitValidUntil: dateTime
- permitCopyIndicator: boolean
- transactionPurposeCode: string
- transactionPurposeText: string
- specialConditions: string
- consignee: Company
- signatures (n): EpermitSignature
- transportContractId: string
- transportContractTypeCode: string

EpermitSignature
EpermitConsignmentURI
- signatoryRole: string
- signatoryCompany: Company
- signatureDate: dateTime
- signatureTypeCode: string
- signatureStatement: string
- securityStampId: string

Adjustments
AdjustmentsURI
- nbCorrection: integer
- reasonsForAdjustments: string
- correctionSerialNumber: string

Logistic Object referring to physical entity (e.g. Piece, ULD, Location)

IotDevice
IotDeviceURI
- sensors (n): Sensor
- deviceDescription: string
- deviceManufacturer: Company
- deviceModel: string
- deviceName: string
- deviceSerialNumber: string
- associatedObject: string

Sensor
sensorURI
- iotDevice: IotDevice
- sensorDescription: string
- sensorType: string
- sensorName: string
- sensorType: string
- sensorSerialNumber: string

Measurements
MeasurementsURI
- measurementTimestamp: dateTime

SensorGeoloc
sensorURI
- sensorType = "Geoloc"
- val (n): MeasurementsGeoloc

SensorOther
sensorURI
- sensorType != "Geoloc"
- val (n): MeasurementsOther

MeasurementsGeoloc
MeasurementsURI
- geolocation: Geolocation

MeasurementsOther
MeasurementsURI
- genericMeasurement: Value