IUNGO BDI - BUSINESS DATA INTEGRATION SERVICE

Standard XML definition for electronic data exchange

v.2.6

Summary

1. Introduction and scope

The current document defines the standard format for order (ORDERS), order response (ORDRSP) and Advanced Shipping Note (DESADV) messages that are used on the IUNGO BDI (Business Data Integration) service for purchase and sales order data exchange between partners.

1.1. Service description

The IUNGO BDI service offers partners the possibility to automatically exchange purchase and sales orders data. The aim of the solution is to provide a unified and standard communication service to different business partners, allowing on the one side to simplify the business interaction between customers and suppliers, and on the other to provide extra services not usually available through normal communication channels.

In this way, IUNGO BDI acts as a mediator between partners, guaranteeing business solution requirements like high availability and scalability.

A standard format must be used for data exchange on the platform in order to allow different partners to seamlessly communicate on IUNGO BDI.

The complete adherence to the current standard guarantees the interoperability between any given active business partners currently on IUNGO BDI, and the seamless integration with new partners that will adhere to the organization's commercial network.

1.2. Scope of the document

The scope of this document is to define the standard format that partners use to communicate through the IUNGO BDI service.

1.3. Out of scope

The following topics, which will be presented in separate documents, are out of scope of the current document.

Data Integration policies

The customer's adhesion to the standard is independent of the number and type of business partners on IUNGO BDI.
All communication specific constraints (e.g., maximum delay time, minimum set of exchanged information, etc.) not contained in the current document will be agree directly by the partners in accordance to the IUNGO BDI service.

Data privacy

Data privacy is one of the main concerns of the entire IUNGO software architecture, thus all security methods and policies (data privacy and protection, secure communication through

encrypted protocols – HTTSs, etc.) will be thoroughly described in a separate document and will be a part of the delivery document.

Data translation for customer specific business logic

All data flow logic from/to the partner's ERP, compatible with the standard format, will be managed through external software modules that may be either developed by the partner's IT department, or by IUNGO, or by third party software providers. This topic will be agreed directly by IUNGO and the business partner, considering that any of the alternatives above are perfectly compatible and independent of the current standard.

2. Notes

2.1. Document format and encoding

The standard data encoding format used for data exchange is the *Extensible Markup Language* (XML). The communication to the IUNGO BDI may be done only by using a XML file formatted according to the rules described in the current document.

The XML file must be encoded in UTF-8.

2.2. Document content

The document to be used for data exchange must contain only attributes defined in the standard format, accordingly to each attribute's type:
- If mandatory, it must contain a correct syntactic and semantic value;
- If optional, it may be omitted (if not differently agreed by the partners);
- If conditional, the given attribute and the one it depends on must satisfy the conditional rule later defined in this document.

Every extra attribute not explicitly defined in the current document will be ignored when sent to the IUNGO BDI.

IUNGO BDI will check the *syntactic* values of each attribute and the conditional rules; in case of inconsistencies the document is denied.

3. ORDERS/ORDRSP

3.1. Document Structure

The standard record (XML) is composed of nested data structures enclosed in the top level tag `<Order>`. Each order is composed of header information, up to 99 header discounts and one or more rows. Each order row may contain product specific information, up to 99 discounts and may be divided into order splits.

The XML document must have the following template structure.

```
<Order>
    …
    <DiscountHeader>
    …
    </DiscountHeader > [0..99]
    <OrderLine>
    …
        <DiscountDetail>
            …
        </DiscountDetail >[0..99]
        <OrderLineSplit>
            …
        </OrderLineSplit >[0..99]
    </OrderLine >[1..N]
</Order >
```

3.2. Attribute List

The current section contains the list of attributes of the standard format.
The tables have the following structure:

- **Code**: unique identifier for each attribute, used as internal reference for the current document;
- **Name**: unique name to be used in the XML document;
- **Format**: the data format of the attribute (numeric, text, date, etc.);
- **Type**:
    - o Mandatory;
    - o Optional;
    - o Conditional;
- **Description**: textual description of the attribute;
- **Notes**: contains constraints on the attribute values.

3.2.1 Header

The header of the order contains the following attributes:

RECORD HE – Order					
Code	**Name**	**Format**	**Type**	**Description**	**Notes**
HE0001	DocumentType	Text[10]	M	Document type	Specify the document type: ORDERS ORDRSP
HE0002	CustomerCode	Text [20]	M	The customer's VAT identification number that allows the supplier to identify the business partner. Usually a constant value.	
HE0003	BusinessUnit	Text[256]	O	Customer's business unit name	
HE0004	SupplierCode	Text [20]	M	The supplier's VAT identification number that allows the customer to identify the business partner. Usually a constant value.	
HE0005	SupplierBusinessUnit	Text[256]	O	Supplier's legal name	
HE0006	OrderNumber	Text [30]	M	Customer's order number combined with the order type	Order Number_Order Type
HE0007	OrderDate	Date	M	Customer's order date.	YYYY-MM-DD
HE0008	OrderTypeName	Text [10]	M	Customer's order type. If the customer doesn't manage order type, the value may be set to "CLOSED"	Allowed values: - OPEN - CLOSED - SCHAGR - KANBAN
HE0009	CustomerContactPerson	Text[100]	O	Customer's contact person.	
HE0010	CustomerContactPersonEmail	Text[100]	O	Customer's contact person email address.	
HE0011	CustomerContactPersonFaxNr	Text[100]	O	Customer's contact person fax number.	
HE0012	CustomerContactPersonPhoneNr	Text[100]	O	Customer's contact person phone number.	

HE0013	BillToCustomerId	Text[20]	O	VAT number of the Customer to bill.	
HE0014	BillToCustomerName	Text[256]	O	Text name of the customer to bill to.	
HE0015	BankAccount	Text[100]	O	Additional bank account information.	
HE0016	IBAN	Text[27]	O	Payment IBAN code.	
HE0017	Payment	Text[100]	O	Text description of the payment means that the customer may require.	
HE0018	PaymentMeansCode	Text[3]	O	Payment means code.	1 = Direct payment 35 = Bank transaction 10 = Cash 15 = Bookentry credit 20 = Cheque 23 = Bank cheque 30 = Credit transfer 31 = Debit transfer 42 = Payment to bank account 70 = Bill drawn by the creditor on the debtor 74 = Bill drawn by the creditor on a bank 15E = Pre-authorized debit 97 = Clearing between partners If blank, please refer to HE0017.
HE0019	CurrencyCode	Text[3]	O	Currency Code	Alphanumeric code that identifies the currency. The main values are the following: • EUR • USD • GBP • CHF • JPY • CNY • AUD
HE0020	IncotermCode	Text[3]	O	INCOTERMS code	- EXW (EX WORKS) - DAT (DELIVERED AT TERMINAL) - FCA (FREE CARRIER) - DAP (DELIVERED AT PLACE) - CPT (CARRIAGE PAID TO) - DDP (DELIVERED DUTY PAID) - CIP (CARRIAGE AND INSURANCE PAID TO) - FAS (FREE ALONGSIDE SHIP) - CFR (COST AND FREIGHT)

						- FOB (FREE ON BOARD) - CIF (COST, INSURANCE AND FREIGHT)
HE0021	IncotermPlace		Text[100]	O	Text description of the INCOTERMS	
HE0022	Packaging		Text[100]	O	Text description of the packaging required by the customer.	
HE0023	DeliveryAddress		Text[256]	O	Delivery address requested by the Customer.	
HE0024	DeliveryAddressId		Text[20]	O	Delivery Address ID	
HE0025	StructuredDeliveryAddress			O	Structured Delivery Address.	
		Address	Text[100]	M		
		City	Text[100]	M		
		PostalCode	Text[20]	O		
		Region	Text[100]	O		
		Country	Text[100]	M		
HE0026	SupplierContactPerson		Text[100]	O	Supplier's contact person.	
HE0027	SupplierContactPersonEmail		Text[100]	O	Supplier's contact person email address.	
HE0028	SupplierContactPersonFaxNr		Text[100]	O	Supplier's contact person fax number	
HE0029	SupplierContactPersonPhoneNr		Text[100]	O	Supplier's contact person's phone number.	
HE0028	InvoiceHeading		Text[100]	O	Invoice Heading	
HE0029	OrderSignedBy		Text[100]	O	Customer "signed by" reference person.	
HE0030	TransportCondition		Text[100]	O	Text description of the transport condition required by the customer	

Code	Name		Format	Type	Description	Notes
HE0031	TransportCost		Decimal[18.5]	O	Cost of transport, expressed in the same currency as HE0015.	
HE0032	SeasonCode		Text[10]	O	Season Code (used only in fashion industry).	
HE0033	SeasonDescription		Text[10]	O	Season Description (used only in fashion industry).	
HE0034	Note		Text	O	Notes	
HE0035	ConfirmationNumber		Text[20]	C	Supplier's confirmation code	Mandatory in ORDRSP
HE0036	ConfirmationDate		Date	C	Supplier's confirmation date	Mandatory in ORDRSP Format must be YYYY-MM-DD
HE0037	DiscountHeader		DiscountHeaderType	O	Discount Structure	Refer to Section 3.2.1.1
HE0038	Attachment			O	Attachment Structure containing name and URI.	
		Name	Text[256]	M		
		URI	URI	M		
HE0039	OrderLine		OrderLineType	O	OrderLine Structure	Refer to Section 3.2.2

3.2.1.1 Header Discount

The header discounts may contain the following attributes:

| RECORD DH - DiscountHeader - Max 99 lines in each order					
Code	Name	Format	Type	Description	Notes
DH0001	SequenceNumber	Number[6]	M	Incremental line number	
DH0002	DiscountType	Text[1]	M	Discount type	I = Increase D = Decrease
DH0003	ValueType	Text[1]	M	Discount type computed by	P = Percentage V = Value
DH0004	Value	Decimal[18.5]	M	Discount amount	

3.2.2. Order line detail
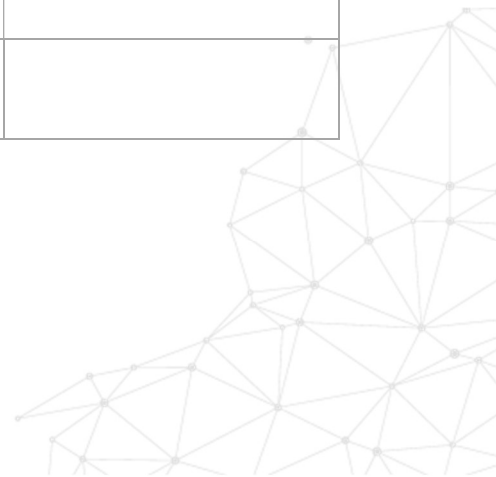The orders line may contain the following attributes:

Code	Name	Format	Type	Description	Notes
RECORD DT - DETTAGLIO ORDINE – OrderLine
DT0001	OrderLineNumber	Text[20]	M	Order line number	
DT0002	SupplierItemCode	Text[16]	C	Supplier's product code	Mandatory if DT0004 is missing.
DT0003	SupplierItemDescription	Text[1000]	O	Supplier's product description.	
DT0004	CustomerItemCode	Text[16]	C	Customer's product code.	Mandatory if DT0002 is missing.
DT0005	CustomerItemDescription	Text[1000]	O	Customer's product description.	
DT0006	Qty	Decimal [15.5]	M	Ordered/confirmed quantity.	
DT0007	QtyUnitCode	Text[3]	M	The unit of measure of the quantity.	
DT0008	AlternativeQty	Decimal[15,5]	O	Alternative quantity to use instead of quantity.	
DT0009	AlternativeQtyUnitCode	Text[3]	O	Quantity unit code to use with DT0047.	
DT0010	DeliveryDate	Date	C	Delivery date required by the customer.	Mandatory if DT0011 is missing.
DT0011	DeliveryDateTime	DateTime	C	Delivery date and time	Mandatory if DT0010 is missing.
DT0012	OrderLineStatus	Text[30]	M	Order line status. The value "FORECAST" is allowed only if HE006 is SCHAGR.	Allowed values: - OPEN - CANCELED - CLOSED - FORECAST

DT0013	Price		Decimal [18.5]	M	Unit price	
DT0014	PriceType		Text[3]	M	Price type	Mandatory if DT0011 specified. AAA = Netto AAB = Gross AAC = Agreed price
DT0015	PriceUnitCode		Text[3]	C	Unit of measure code to be used for the price unit code.	
DT0016	DeliveryAddress		Text[256]	C	Delivery address requested by the Customer.	Mandatory if all the following are missing: HE0023 HE0024 HE0025 DT0017 DT0018
DT0017	DeliveryAddressId		Text[20]	C	Delivery Address ID	Mandatory if all of the following are missing: DT0016
DT0018	StructuredDeliveryAddress			O	Structured Delivery Address	Mandatory if all of the following are missing: HE0023 HE0024 HE0025 DT0016 DT0017
		Address	Text[100]	M		
		City	Text[100]	M		
		PostalCode	Text[20]	O		
		Region	Text[100]	O		
		Country	Text[100]	M		
DT0019	CoefQtyPrice		Decimal [10.5]	M	Price conversion coefficient	Used only when the quantity unit of measure is different from the price unit of measure
DT0020	ProjectCode		Text[100]	O	Customer's project code the product is ordered for.	
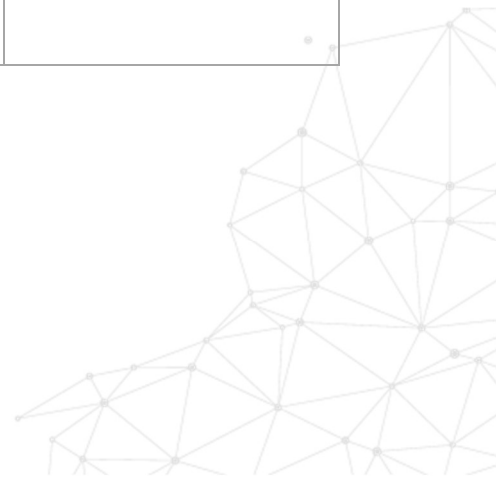
DT0021	ProjectDescription	Text[100]	O	Customer's Project Description.	
DT0022	QtyDelivered	Decimal [15.5]	O	Total quantity received, as registered by the customer.	
DT0023	CumulativeQtyDelivered	Decimal[15,5]	O	Total quantity delivered for the item code. It's for the single customer order.	
DT0024	LastDeliveredDate	Date	O	Last delivery date, as registered by the Customer.	
DT0025	LastDeliveryNoteNumber	Text[100]	O	Last delivery note for the line number, as registered by the Customer.	
DT0026	LastDeliveryNoteDate	Date	O	Last delivery note date for the line number, as registered by the Customer.	
DT0027	RfpNumber	Text[30]	O	Request for Purchase (RfP) Number that the line number is related to.	
DT0028	RfpDate	Date	O	Rfp date that the line number is related to.	
DT0029	RfpLineNumber	Text[6]	O	Rfp Line Number that the line number is related to.	
DT0030	EanCode	Text[13]	O	EAN product code.	
DT0031	Carrier	Text[100]	O	Carrier description	
DT0032	TechnicalDrawingRev	Text[10]	O	Technical Drawing Revision Index	
DT0033	TechnicalDrawingRevDate	Date	O	Technical Drawing Revision Date	

DT0034	TechnicalDrawingNumber	Text[16]	O	Technical Drawing Number	
DT0035	KanbanId	Text[100]	C	Kanban ID	Mandatory if order type is KANBAN
DT0036	KanbanContainerCode	Text[16]	C	Kanban container code	Mandatory if order type is KANBAN
DT0037	KanbanContainerDescription	Text[100]	C	Kanban container description	Mandatory if order type is KANBAN
DT0038	KanbanLocation	Text[100]	C	Kanban Location	Mandatory if order type is KANBAN
DT0039	KanbanContainerQty	Decimal [15.5]	C	Kanban Container quantity	Mandatory if order type is KANBAN
DT0040	TransportMode	Text[100]	O	Transport mode description	
DT0041	TransportModeCode	Text[1]	M	Transport mode description code	- 0 (Transport mode not specified) - 1 (Maritime transport) - 2 (Rail transport) - 3 (Road transport) - 4 (Air transport) - 5 (Mail) - 6 (Multimodal transport) - 7 (Fixed transport installation) - 8 (Inland water transport) - 9 (Transport mode not applicable)
DT0042	ManufacturerName	Text[100]	O	Manufacturer Name	
DT0043	ManufacturerItemCode	Text[16]	O	Manufacturer Item code	
DT0044	ReferenceContractNumber	Text[100]	O	Contract number reference	
DT0045	ReferenceContractStartDate	Date	O	Contract number start date	
DT0046	ReferenceContractEndDate	Date	O	Contract number end date	
DT0047	DocumentationUrl	Text[1000]	O	Customer's order documentation URL.	Must be a valid URL.

DT0048	Note		Text	O	Order line notes.	
DT0049	PriceMultiplier		Number[9]	C	Price Multiplier used for scale conversion	Used only when one partner cannot use the required number of decimals. Mandatory if DT0011 specified.
DT0050	Priority		Number[9]	O	Order line priority.	1 = Urgent 2 = Medium 3 = Normal
DT0051	DiscountDetail		DiscountDetailType	O	Discount Structure	Refer to Section 3.2.2.1
DT0052	OrderLineSplit		OrderLineSplitType	O	Split Structure	Refer to Section 3.2.2.2
DT0053	Attachment		Structure	O	Structure containing up to 99 order line attachments.	
		Name	Text[256]	M		
		URI	URI	M		

3.2.2.1. Order line discounts

Order line discounts must contain the following attributes:

RECORD DD - SCONTI DI RIGA - DiscountDetail - Max 99 ripetizioni					
Code	Name	Format	Type	Description	Notes
DD0001	SequenceNumber	Number[6]	M	Incremental line number.	
DD0002	DiscountType	Text[1]	M	Discount type	I = Increase D = Decrease
DD0003	ValueType	Text[1]	M	Type of discount computation.	P = Percentage V = Value
DD0004	Value	Decimal [18.5]	M	Discount amount	

3.2.2.2. Order line split

The order line split is the operation that allows to divide the quantity of the order line into two or more parts for delivery at different points in time.
The partner who might need to split the order line must act as follows:
- Reduce the quantity of the main line to the quantity for delivery at the requested date;
- Add one or more split lines to the line structure.

The sum of the quantities of the main order line and the split lines must correspond to the original line quantity.

The order line split may contain the following attributes:

RECORD SP - OrderLineSplit					
Code	Name	Format	Type	Description	Notes
SP0001	OrderLineSplitNumber	Text[6]	M	Incremental split number	
SP0002	DeliveryDate	Date	M	Delivery date	
SP0003	Qty	Decimal [15.5]	M	Delivered Quantity	
SP0004	Note	Text[1000]	O		

4. DESADV

4.1. Document Structure
The DESADV document content is contained in a `<Desadv>` tag. Data is divided between header information and line information.

4.2. Attributes list

4.2.1. Header

RECORD SH – Advanced Shipping Note Header - <Desadv>					
Code	Name	Format	Type	Description	Notes
SH0001	CustomerCode	Text[20]	M	Document type	
SH0002	SupplierCode	Text[20]	M	The customer's VAT identification number that allows the supplier to identify the business partner. Usually a constant value.	
SH0003	DesadvNumber	Text[16]	M	ASN Number	
SH0004	DesadvDate	Date	M	ASN Date	
SH0005	DeliveryDate	Date	O	Delivery date	
SH0006	DeliveryAddress	Text[100]	O	Textual Delivery address	
SH0007	DeliveryAddressId	Text[10]	C	Delivery address ID reference	Mandatory if SH0006 is missing.
SH0008	Carrier	Text[100]	O	Carrier	
SH0009	Attachment	Structure	O	Structure containing up to 99 attachments.	(new in XML v2.3)
	Name	Text[256]	M		
	URI	URI	M		

		AttachmentTypeCode	Text[3]	M	Type of attachment	- DOT = Document of Transport - INV = Invoice - CER = Certificate / Certification - DOO = Declaration of Origin - OTH = Other
SH0010	DesadvLine		DesadvLineType	O	DesadvLine Structure	Refer to Section 4.2.2

4.2.2. Line

RECORD SH – Advanced Shipping Note Line - <DesadvLine>					
Code	**Name**	**Format**	**Type**	**Description**	**Notes**
SD0001	DesadvLineNumber	Text[6]	M	ASN Line Number	
SD0002	OrderNumber	Text[30]	M	Customer order number reference	
SD0003	OrderTypeName	Text[10]	M	Customer order type.	
SD0004	OrderDate	Date	M	Customer order date	
SD0005	OrderLineNumber	Text[20]	M	Customer order line reference	
SD0006	Qty	decimal[15.5]	M	Quantity	
SD0007	QtyUnitCode	Text[3]	M	The unit of measure of the quantity.	
SD0008	SupplierItemCode	Text[16]	O	Supplier Item Code	
SD0009	SupplierItemDescription	Text[100]	O	Supplier Item Description	
SD0010	CustomerItemCode	Text[16]	O	Customer Item Code	
SD0011	CustomerItemDescription	Text[100]	O	Customer Item Description	
SD0012	ProductBatchCodePartner	Text[100]	O	Supplier Item Batch Code	
SD0013	PackageNr	Num[6]	O	Package Number	
SD0014	PackageIdentifier	Text[10]	O	Package Code	

SD0015	Attachment		Structure	O	Structure containing up to 99 attachments.	(new in XML v2.3)
		Name	Text[256]	M		
		URI	URI	M		
		AttachmentTypeCode	Text[3]	M	Type of attachment	- DOT = Document of Transport - INV = Invoice - CER = Certificate / Certification - DOO = Declaration of Origin - OTH = Other
SD0016	SerialNumber		Text[1000]	O	Serial number of the Item delivered	
SD0017	Note		Text[1000]	O	Note related to the item delivered	

When the delivery material corresponding to the same article code (from the same order line number) comes from different production batches, one ASN line must be created for each article and different batch number. Likewise, if the delivery material corresponding to the same article code is delivered in different packages, one ASN line must be created for each article and different package number.

5. Data format rules

5.1. <u>Numeric values</u>
Numeric values may contain only the decimal separator (no thousands separator). The decimal separator is the dot ".".
For example, the following is a correct value `1132.45`.

5.2. <u>Date and Date Time</u>
Date attributes must be formatted according to the <u>ISO 8601:2004</u> standard `YYYY-MM-DD`. For example, the value `2016-03-11` is used to express the date "11th of March, 2016".

All *DateTime* attributes defined in this document must use the following <u>ISO 8601:2004</u> compliant format `YYYY-MM-DDTHH:MM:SS+HH:MM`. This format uses a separator ("+" or "-") to separate the timestamp value by the time zone offset.
For example, the following value `2016-03-11T11:30:00+01:00` is used to express the time "11:30:00" of the date "2016-03-11" in the UTC+1 time zone.

5.3. <u>Currencies</u>
The currencies codes used in the standard record are the ones defined in the ISO 4217:2015 standard. The reference used in this document is the three letter alphanumeric code. The main currencies in use on the IUNGO BDI (for the complete list please refer to the standard) are the following:

- EUR – Euro (€);
- USD – American Dollar ($);
- GBP – British Pound (£);
- CHF – Swiss franc ();
- JPY – Japanese Yen (¥);
- CNY – Chinese Yuan (¥);
- AUD – Australian Dollar (A$);

5.4. <u>Units of measure</u>
The standard format uses only the <u>UN/CEFACT Trade Facilitation Recommendations - Recommendation N°. 20</u> - Codes for Units of Measure Used in International Trade – Level I & II.

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