

# Classification of procurement scenarios

<b>Version</b>	<b>Author</b>	<b>Change</b>
0.1	Peter L. Borresen	Initial version
0.2	Peter L. Borresen	Updated with styles. New format of schemas.

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## 1 Introduction

This document focuses on how to describe procurement in the Danish public sector using UBL 2.0 with procurement scenario. It intends to classify scenarios in a structured way in order to cover a broad bouquet of the most common scenarios in the public sector in Denmark.

A scenario is described by:

- **A scenario situation.** This means what is intended to be procured by whom and how the procurement is initiated.
- **A scenario context.** This means the rules and organization involved in the procurement.
- **A scenario outcome.** This means how the scenario turns out. If everything turns out as intended, we call a “happy day”-scenario.

## 2 Scenario context

The scenarios can take place in various environments and organisations. This is what we refer to as scenario context. A scenario context is defined by:

- The scenario environment.
- The buyers organization
- The sellers organization

### 2.1 The scenario environment

The scenario environment is an agreement of how to exchange information electronically between parties. This is often done by a standardization organisation, a legal authority or bilateral between the buying and selling organization. Within UBL 2.0 there are several ways of setting up the scenario context. This document uses three classifications of UBL use:

1. Simple UBL usage. Procurement based on Catalogue, Order, Order Simple, Order Cancellation, Invoice and Credit note
2. Limited UBL usage. Procurement based on Catalogue, Order, Order Simple, Order Cancellation, Receipt advice, Invoice, Credit note and account response.
3. Full UBL usage: Procurement where UBL carries all relevant information between buyer and seller with the possibility to change orders. This kind of procurement uses all relevant UBL 2.0 documents to exchange the information in the transaction.

### 2.2 The buyers organization

The buyer's organization is defined by

- The various departments or employed (parties) involved in the procurement. Who is responsible for determining what can be procured and from which supplier? Who is actually purchasing the order? Who is responsible for receiving the goods? Who receives and handles the invoice.
- The internal business rules and process for approving and checking the incoming documents. Standard processes are “approve procurement”, “match order response with order”, “match invoice with delivery”, and “match invoice with order”.
- The systems involved in the procurement and the interfaces between them. Which computer or manual system is involved in the different phases of the procurement?

The buyer's organization can be categorized into

- Simple buyer organization. An organization where it is the same person who fulfils all the roles in the procurement scenario. The procurement is born in the financial accounting systems and maintained only there. This is the case for minor public schools.
- Complex buyer organization. An organization where the different departments and systems are involved in the different phases of the procurement. On department may take care of the ordering, others of the delivery reception and others again for the handling of the invoice. Some of the responsibility may even be taken care of by an other company.

## 2.3 The sellers organization

The seller's organization is defined by:

- The way the seller let the buyers know what he can provide, e.g. a catalogue on the Internet, sending catalogues to the buyer or establishing contracts for delivery.

The parties involved in fulfilling the orders, e.g. whether parts of the task are outsourced to other companies.

## 3 Scenario packages

The scenarios are organized into a number s packages. Each package has it own focus and seeks to only vary in one dimension.

### 3.1 Numbering rules for scenarios

The scenarios in this document is numbered by four parts, each divided by an underscore “\_”:

- Abbreviation of the package
- A number that identifies the procurement situation (what to be bought by who)
- A number that identities the procurement context for the procurement situation (the buyer and seller organizations and the procurement environment, meaning agreements of what kind of documents to send when)
- A number identifying the outcome of the procurement or path the procurement follows. The following outcome has been recognized:
  00. Happy day
  01. Order mismatch
  02. Out of stock
  03. Price changed since ordered
  04. Delivery failure
  05. Invoiced non delivery goods
  06. Invoice miscalculated

### 3.2 Simple catalogue based procurement cycle

Simple procurement cycle is a class of procurement that implies a simple setup for procurement. This means:

- The procurement takes place in a small organisation with no purchase department.
- The buyer is the originator.
- The transaction is born in the financial management system. No other systems are on business level involved in the procurement transaction.

- The procurement process is initiated by a buyers need for some physical goods being delivered one time at one place.
- The flow of documents is: One order, one order response simple, one invoice, and eventually one credit note.
- The order is based on a lookup in a catalogue.

The scenarios contained in this package is:

- **SIMCAT\_01\_01\_00: Procurement of a blackboard to a minor public school, happy day.** This scenario specifies how a minor public school buys a blackboard from an office supplier when everything goes well.
- **SIMCAT\_01\_01\_03: Procurement of a blackboard to a minor public school, out of stock.** This scenario specifies how a minor public school tries to buy a blackboard but fails because the supplier is out of stock.
- **SIMCAT\_01\_01\_02: Procurement of a blackboard to a minor public school, invoiced too much.** This scenario specifies how a minor public school buys a blackboard, but the supplier sends an invoice where a 20% discount is missing.

### 3.3 Complex delivery procurement cycle

This package describes how a various public organisations purchase goods with more than on delivery.

The scenarios contained in this package are:

- **COMDEL\_01\_01\_00: Procurement of fruits to a university administration office, happy day.** This scenario describes catalogue-based procurements with one order, one order response, many deliveries and many invoices.
- **COMDEL\_02\_01\_00: Procurements of office furniture to a high school administration office, happy day.** This scenario describes catalogue-based procurement with one order, one order response, many deliveries to the same address and only one invoice.
- **COMDEL\_03\_01\_00: Procurements of wheelchairs to citizens of a municipality, happy day.** This scenario describes procurement in a complex organization with one order, one order response and many deliveries to different delivery addresses.
- **COMDEL\_01\_01\_01: Procurement of fruits to a university administration office, one delivery not accepted.** This scenario describes procurement where one of the deliveries is not accepted. One of the invoices is therefore rejected. This is notified by sending an email or an account response.
- **COMDEL\_02\_01\_01: Procurements of office furniture to a high school administration office, delivery failure.** This scenario describes procurement where one the second delivery is not delivered in time. The purchaser selects therefore to cancel the order.

### 3.4 Non-goods procurement cycle

This package describes procurements that have no physical delivery.

The scenarios in this package are:

- **NONGDS\_01\_01\_00: Procurement of consultant services to a government agency, happy day.** This scenario describes a contract-based procurement. The only document send is the invoice.
- **NONGDS\_02\_01\_00: Procurement of flight tickets to a government employed, happy day.** This scenario describes a normal procurement in a complex buyer organisation with the one exception that the delivery is not send to the normal delivery point but by email to the originator.

- **NONGDS\_03\_01\_00: Catalogue-based procurement of bonds to a municipality, happy day.** This scenario describes how a financial department of a municipality buys bonds from a bank using catalogue-based order, order response, invoice, remittance advice and statement.
- **NONGDS\_04\_01\_00: Settlement of stamping from a minor school, happy day.** This scenario describes settlement of stamping by ordering the stamping that already has been used. The postal operator then sends an invoice for what has been ordered.
- **NONGDS\_05\_01\_00: Settlement of stamping from a minor school using self-billing.** This scenario describes how a minor school settle its use of stamping by sending a self-billed invoice.

### 3.5 Internet based procurement cycle

This package describes how procurement based on catalogues on a websites, e.g. an electronic marketplace happens.

The scenarios in this package are:

- **INETPR\_01\_01\_00: Procurement of a book to a teacher in a minor school, paid with credit card, happy day.** This scenario describes a typical e-trade from an online bookstore. The book is paid by credit card, the money is drawn the moment the book is sent to the buyer.
- **INETPR\_02\_01\_00: Procurement of toys to a kinder garden from an electronic market place, happy day.** This scenario describes how procurement is done from an electronic marketplace.
- **INETPR\_03\_01\_00: Online based procurement of bonds to a municipality, happy day.** This scenario describes how procurement of bonds can be done with use of only order, order response and invoice.

### 3.6 Utility procurement cycle

Utility procurement covers the payments of continuing deliveries like telephone, gas and electricity.

The scenarios in this package are:

- **UTILPR\_01\_01\_00: Procurement of electricity to a municipality, happy day.** This scenario describes how electricity is settled and sent to payment in a municipality.
- **UTILPR\_02\_01\_00: Telephone settlement of a public hospital, happy day.** This scenario describes how a telephone usage is settled in a public hospital.
- **UTILPR\_01\_01\_01: Procurement of electricity to a municipality, non-exciting location invoiced.** This scenario describes how electricity is settled and sent to payment in a municipality when an error is found in the invoice.

### 3.7 Complex organizations procurement cycle

This package addresses straightforward procurements in large and complex organizations. Common for these scenarios is that the originator is not the buyer.

The scenarios in the package are:

- **COMORG\_01\_01\_00: Procurement of various office supplies for a government agency, happy day.** This scenario shows a stock initiated procurement in an agency with a separate procurement department and a separate goods reception.
- **COMORG\_02\_01\_00: Procurement of a computer monitor in government agency, happy day.** This scenario describes a requisition initiated procurement in an agency with a separate

procurement department and a separate goods reception from a supplier that has outsource the freight forward and the invoicing part of the business.

- **COMORG\_02\_01\_00: Procurement of medicine, happy day.** This scenario describes how a family doctors orders medicine for his client. The client pays for one part of the bill and the pharmacy sends a bill for the other part the social security.

## 4 Scheme to classify scenarios

The scheme below serves as an overview of all scenarios in the package. It shows how they vary according to context, situation and outcome.

	Aspect	Value	SIMCAT_01_01_00	SIMCAT_01_01_03	SIMCAT_01_01_06	COMDEL_01_01_00	COMDEL_02_01_00	COMDEL_03_01_00	COMDEL_01_01_01	NONGDS_01_01_00	NONGDS_02_01_00	NONGDS_03_01_00	NONGDS_04_01_00	INETPR_01_01_00	INETPR_02_01_00	INETPR_03_01_00	
Environment	Simple UBL		X	X	X												
	Limited UBL																
	Full use UBL																
Buyer organization	Approval	No approval	X	X	X												
		Approval of order only															
		Approval of order and invoice															
		Approval of invoice only															
	Order-response match	(None, manual, external or ERP provided)	ERP	ERP	ERP												
	Delivery-order match	(None, manual, external or ERP provided)	ERP	ERP	ERP												
	Invoice-delivery match	(None, manual, external or ERP provided)	ERP	ERP	ERP												
	Invoice order (price) match	(none, manual, external or ERP provided)	ERP	ERP	ERP												
	Outsourcing	Centralized procurement department (yes, no)	No	No	No												
		Ordering from electronic marketplace (yes, no)	No	No	No												
		Outsourced receive function/delivery to external party	No	No	No												
Outsourced accounting function.		No	No	No													
Outsourced payment function.		No	No	No													
Sellers organization	Outsourcing	Outsourced selling organization.	No	No	No												
		Outsourced delivery function.	No	No	No												
		Outsourced invoicing function.	No	No	No												

Situation	Initiation of procurement	Applicant initiated																			
		Buyer initiated	X	X	X																
		Buyer stock initiated																			
		Contract initiated																			
		Supply contract initiated																			
	Delivery	No physical delivery																			
		One delivery, one delivery point	X	X	X																
		Many delivery, one delivery point																			
		Many delivery, many delivery points																			
	Payment	Payment before delivery																			
		Payment after each delivery																			
		Payment after fulfilment	X	X	X																
Outcome	00 Happy day		X																		
	01 Order mismatch																				
	02 Out of stock				X																
	03 Price changed since ordered																				
	04 Delivery failure																				
	05 Invoiced non delivered goods																				
	06 Invoice miscalculated							X													