



e-Procurement quoting Solution Architecture Template (SAT)



Change control

Table 1-1

Modification	Details
Version 1.0.0 beta	
Initial version	

Disclaimer:

The views expressed in this report are purely those of the authors and may not, in any circumstances, be interpreted as stating an official position of the European Commission.

The European Commission does not guarantee the accuracy of the information included in this study, nor does it accept any responsibility for any use thereof.

Reference herein to any specific products, specifications, procedure, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favouring by the European Commission.

All care has been taken by the author to ensure that s/he has obtained, where necessary, permission to use any parts of manuscripts including illustrations, maps, and graphs, on which intellectual property rights already exist from the titular holder(s) of such rights or from her/his or their legal representative.

ArchiMate® and TOGAF® are registered trademarks of The Open Group.

ArchiMate© and TOGAF© are copyright of The Open Group. All rights reserved.

Archi® is a registered trademark of Phillip Beauvoir.

TABLE OF CONTENTS

1	INTRODUCTION	6
1.1	PURPOSE OF THIS DOCUMENT	6
1.2	LIST OF ACRONYMS USED IN THIS DOCUMENT	6
2	GOAL, DESCRIPTION AND TARGET AUDIENCE.....	7
2.1	GOAL	7
2.2	WHAT IS E-PROCUREMENT QUOTING BUSINESS CAPABILITY?	7
2.3	WHAT IS A SOLUTION ARCHITECTURE TEMPLATE (SAT)	7
2.4	TARGET AUDIENCE	7
3	E-PROCUREMENT QUOTING INTEROPERABILITY MAPPED TO THE EIRA	9
3.1	ARCHIMATE MOTIVATION EXTENSION	9
3.2	HOW TO USE THIS SAT	9
3.3	E-PROCUREMENT QUOTING LEGAL VIEW.....	11
3.4	E-PROCUREMENT QUOTING ORGANISATIONAL VIEW	12
3.5	E-PROCUREMENT QUOTING SEMANTIC VIEW	15
3.6	E-PROCUREMENT QUOTING TECHNICAL VIEW – APPLICATION	16
3.7	E-PROCUREMENT QUOTING TECHNICAL VIEW – INFRASTRUCTURE	17
4	REFERENCES	18
5	ACKNOWLEDGEMENTS.....	19
6	APPENDIX: LEGAL VIEW.....	20
7	APPENDIX: ORGANISATIONAL VIEW.....	21
8	APPENDIX: SEMANTIC VIEW	22
9	APPENDIX: TECHNICAL VIEW – APPLICATION	23
10	APPENDIX: TECHNICAL VIEW – INFRASTRUCTURE	24

1 INTRODUCTION

This document contains the description for a Solution Architecture Document (SAT) for the e-Procurement *quoting* business capability.

This SAT is based on EIRAv2.0.0, which is aligned with ArchiMate® 3.0.

The ArchiMate source are embedded in this document in the “Archi format” as well as in “The Open Group ArchiMate Model Exchange File Format”.



SAT e-Procurement
quoting v1.0.0 beta.



SAT e-Procurement
quoting v1.0.0 beta.

1.1 Purpose of this document

Enterprise and Solution architects can use this document to design solution architectures in the domain of e-Procurement quoting business capability.

1.2 List of acronyms used in this document

Table 1-1

ABB	Architecture Building Block
BII	Business Interoperability Interfaces
CA	Contracting Authority
CEF	Connecting Europe Facility
CEN	Comité Européen de Normalisation (European Committee for Standardization)
CEN TC 440	CEN Technical Committee 440 – Electronic Public Procurement
EIRA	European Interoperability Reference Architecture
EO	Economic Operator(s)
GDPR	General Data Protection Regulation
HI	Human Interface
IES	Interoperable European Solution
ISA ²	Interoperability solutions for public administrations, businesses and citizens
MMI	Machine to Machine Interface
SAT	Solution Architecture Template
SBB	Solution Building Block
UBL	Universal Business Language

2 GOAL, DESCRIPTION AND TARGET AUDIENCE

This chapter gives the goals and a description on e-Procurement quoting business capability and indicates the target audience and their potential use of this Solution Architecture Template (SAT).

2.1 Goal

The purpose of this SAT is to provide guidance by defining a minimal, but holistic (legal, organisational, semantic and technical) interoperability architecture in the domain of e-Procurement quoting business capability. This SAT should allow businesses, citizens and public administrations to have a common understanding of the most-salient building blocks.

2.2 What is e-Procurement quoting business capability?

The quoting business capability of e-Procurement covers activities preparatory to issuing an order, including the exchange of electronic messages with winning tenderers who have signed a framework agreement with the contracting body, a request for quotation and the response to the quotation (e.g. framework agreements with reopening competition), etc.

2.3 What is a solution architecture template (SAT)

A Solution Architecture Template (SAT) is a specification extending the EIRA providing support to solution architects in a specific solution domain. An SAT contains a motivation (principles, requirements), a goal and a description of the supported functionalities, a sub-set of the EIRA core Architecture Building Blocks (ABBs) covering the four views, a set of specific ABBs extending EIRA's views enabling specific functionalities to be provided by implementations derived from the SAT and the interoperability specifications of selected ABBs and a narrative for each EIRA view.

The benefits of a SAT are the following:

- Provides architects with a common approach to cope with a specific interoperability challenge. It also places the focus on the key-points you need to consider.
- A solution architect can create a solution architecture by mapping existing Solution Building Blocks (SBBs) to an SAT, based on the interoperability specifications that are provided. This is done by providing SBBs for the ABBs identified in the SAT.
- When an architect creates an SAT, he/she can define the interoperability specifications for the SAT's ABBs and moreover recommend specific SBBs which produces faster and more interoperable results.
- An SAT can be created within and across the different views of the EIRA. An SAT can then support architects specialised in different interoperability levels."

2.4 Target audience

This document has the following target audience:

Table 2-1

Audience	Description
Solution Architect	Solution architects in the need of understanding, implementing, or describing an e-Procurement quoting solution
Policy maker	Policy makers studying the implications due to policy changes in the area of e-Procurement, quoting part

Public Administration / Members States	Public Administrations of the European Union that need to have a holistic view of the e-Procurement, quoting part interoperability architecture
---	---

3 E-PROCUREMENT QUOTING INTEROPERABILITY MAPPED TO THE EIRA

This chapter contains for each EIRA view the corresponding ArchiMate model and narrative. Next to the SAT's EIRA architecture building blocks, the ArchiMate model includes, where applicable, the related specifications, principles and requirements.

The models have been scaled down to fit with the text, they are included in bigger format in the appendix.

3.1 ArchiMate Motivation extension

There is no supplementary building block in this specific e-Procurement quoting Motivation View in comparison with the e-Procurement core Motivation View provided in the e-Procurement core SAT. The core Motivation View specified in the e-Procurement core SAT applies.

There is no supplementary building block in this specific e-Procurement quoting Motivation View in comparison with the e-Procurement core Motivation View provided in the e-Procurement core SAT.

3.2 How to use this SAT

The present SAT is specifically related to the quoting business capability of e-Procurement. The present document has to be used in complement to the SAT related to e-Procurement.

Indeed:

- The e-Procurement core SAT focuses on the architecture that is common to all e-Procurement business capabilities.
- The present e-Procurement quoting SAT addresses the architecture that is specific to the quoting business capability.

Said in other words, the e-Procurement core SAT provides the foundation for the core e-Procurement, while the present SAT complements it by addressing the e-Procurement quoting specificities.

A solution architect that uses the two Solution Architecture Templates typically wants to perform a gap-analysis between an existing solution and these SATs, or he/she wants to model a solution in the domain of e-Procurement quoting and uses the two SATs as guidance.

3.2.1 e-Procurement quoting Gap Analysis use case

Using the two *e-Procurement core* and *e-Procurement quoting* SATs for gap analysis, the solution architect can map the building blocks of the solution to the ones in the two SATs and identify which building blocks are missing. These building blocks can either indicate missing functionality or missing interoperability specifications.

3.2.2 e-Procurement quoting Building a solution architecture use case

When building a solution architecture, the solution architect is expected to use the four different EIRA views in the two *e-Procurement core* and *e-Procurement quoting* SATs and provide a solution in the form of Solution Building Blocks (SBBs) for the Architecture Building Blocks (ABBs) that are indicated. This is done by replacing the Architecture Building Block (ABB) with an annotated Solution Building Block (SBB). The existing Solution Building Blocks in the two SATs should not

be removed and replaced. However, the acknowledgement of reusing these building blocks can be done by removing the ABBs which they specialise.

Interoperability Specifications (IoP specs) are added as specialisation of an Interoperability ABB, implemented in the form of an SBB and attached to an ABB as interoperability requirements. The final solution should only contain the implementation (the SBB) of the IoP Spec

The result will be a solution architecture that will contain only SBBs, all ABBs should have been removed (in the case this SAT already provides SBBs for this ABB) or replaced by SBBs (solutions that implement that ABB).



The SAT is a document describing the needed Architecture Building Blocks for a desired solution. This should not be taken as restrictive but as advisory. When an Architecture Building Block (ABB) is present for which there is no implementation foreseen in the form of a Solution Building Block (SBB), it is *strongly* recommended, but not mandatory, to take this ABB into consideration in the final solution.

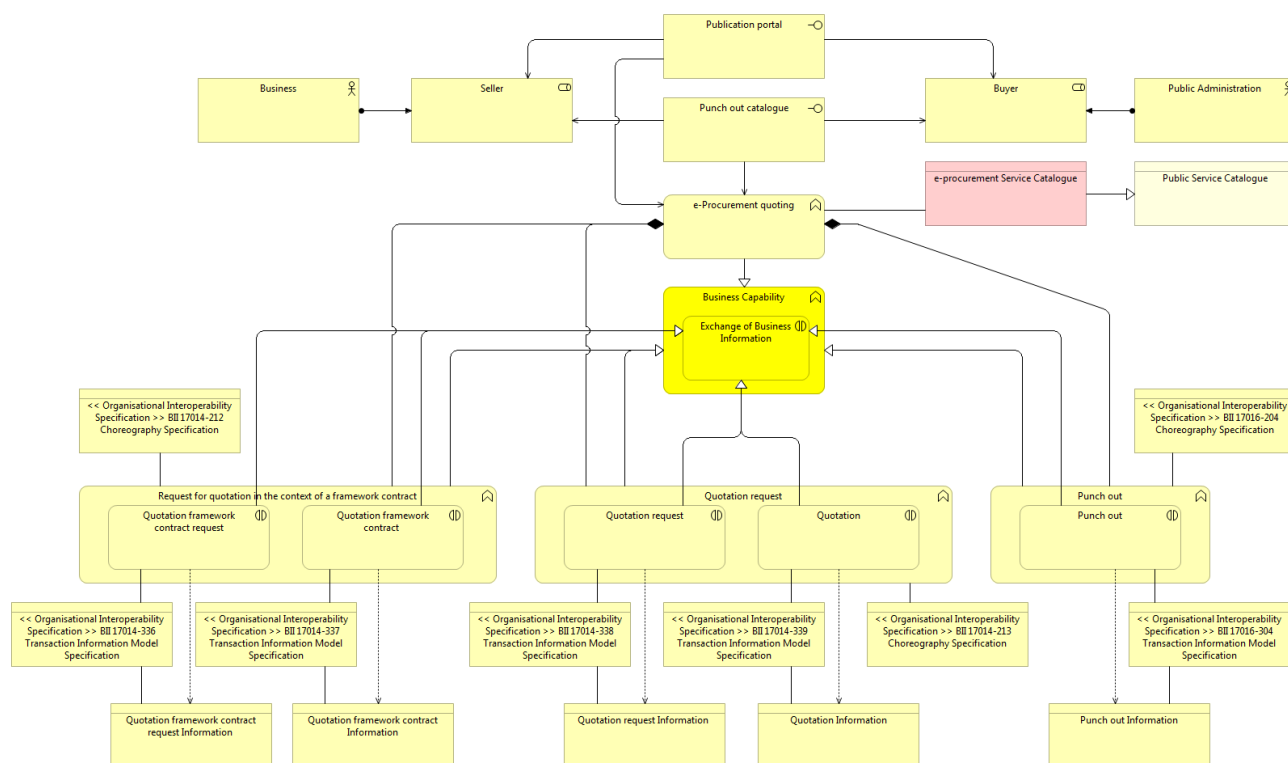
3.3 e-Procurement quoting Legal View

There is no supplementary building block in this specific e-Procurement quoting Legal View in comparison with the e-Procurement core Legal View provided in the e-Procurement core SAT. The core Legal View specified in the e-Procurement core SAT applies.

There is no supplementary building block in this specific e-Procurement quoting Legal View in comparison with the e-Procurement core Legal View provided in the e-Procurement core SAT.

3.4 e-Procurement quoting Organisational View

The Organisational view for the e-Procurement quoting business capability consists in the following sub-set of EIRA Architecture Building Blocks (ABBs) as well as a number of predefined Solution Building Blocks (SBBs):



The e-Procurement quoting Business Capability is provided using the Publication portal Service Delivery Model and is listed in the e-procurement Service Catalogue.

The Publication Portal is used by the Buyer (in the present case a Public Administration) to prepare for issuing an order, including the exchange of electronic messages with the Seller who have signed a framework agreement with the contracting body, a request for quotation and the response to the quotation (e.g. framework agreements with reopening competition) and by the Seller (i.e. Business entities) to give its quotation.

The e-Procurement quoting Business Capability is made up of the following Business Capabilities. For each capability, the Exchanges of Business Information between the Buyer and the Seller it involves are given:

1. Request for quotation in the context of a framework contract

Exchanges of Business Information:

- a. Quotation framework contract request
- b. Quotation framework contract

2. Quotation request

Exchanges of Business Information:

- a. Quotation request
- b. Quotation

3. Punch out

Exchange of Business Information: Punch out

The following table lists the Organisational Interoperability Specifications applying to the Business Capabilities and Exchanges of Business Information:

Table 3-1

Business Capability and Exchange of Business Information	Organisational Interoperability Specification
Request for quotation in the context of a framework contract	BII 17014-212
Quotation framework contract request	BII 17014-336
Quotation framework contract	BII 17014-337
Quotation request	BII 17014-213
Quotation request	BII 17014-338
Quotation	BII 17014-339
Punch out	BII 17016-204
Punch out	BII 17016-304

Request for quotation in the context of a framework contract

Request for quotation in the context of a framework contract choreography describes the process and its variants by which the buyer (the contracting body) gets quotations that may trigger an ordering process in the context of a specific framework contract.

The key aspects of this choreography are:

- The buyer requests the contractors of a procedure having resulted in framework contracts to provide a quotation in the context of their framework contract
- The seller submits a bundle of electronic documents being the quotation.
- The buyer sends back the confirmation of receipt to the economic operator.

The detailed rules of interaction are specified in the framework contract.

Quotation framework contract request

Quotation framework contract request BII transaction provides the set of interoperability specifications to support the electronic exchange of a structured electronic document expressing the request for a quotation in a context of a framework contract.

Quotation framework contract

Quotation framework contract BII transaction provides the set of interoperability specifications to support the electronic exchange of a bundle of electronic documents being the quotation in a context of a framework contract.

Quotation request

Quotation choreography describes the process and its variants by which the buyer (the contracting body) requests a quotation from the seller (economic operator) in a less formally defined process than the tendering procedures.

The key aspects of this choreography are:

- The buyer requests the seller to provide a quotation.
- The seller submits a bundle of electronic documents being the quotation.
- The buyer sends back the confirmation of receipt to the economic operator.

Quotation request

Quotation request BII transaction provides the set of interoperability specifications to support the electronic exchange of a structured electronic document expressing the request for a quotation.

Quotation

Quotation BII transaction provides the set of interoperability specifications to support the electronic exchange of a bundle of electronic documents being the quotation.

Punch out

Punch out choreography describes the process and its variants by which the buyer (the contracting body) selects a seller that has a punch out catalogue system from which he picks all required items in a shopping cart that is sent back to the buyer in a form of a quote that he can use to start an ordering process.

The key aspects of this choreography are:

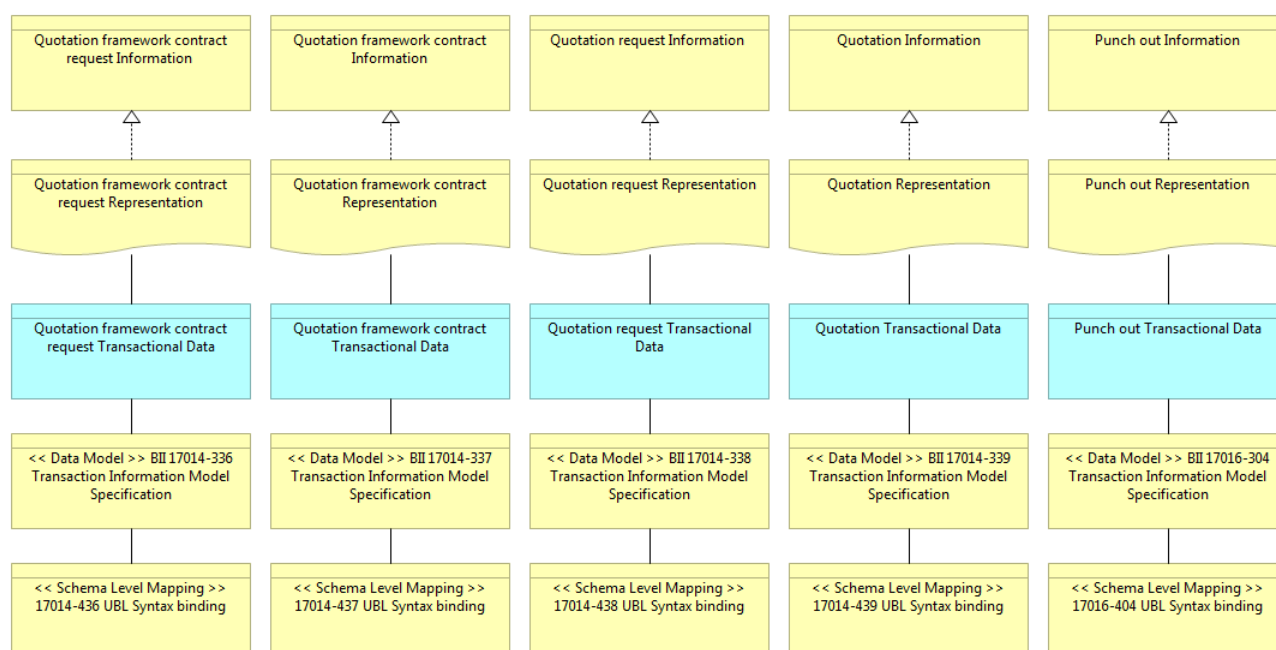
- The buyer accesses the system of the seller to build the shopping cart.
- The shopping cart is sent to the system of the buyer.

Punch out

Punch out BII transaction provides the set of interoperability specifications to support the electronic exchange of information on items selected by the buyer, e.g., prices, ordering information or properties, offered by the seller in a structured format as part of the shopping cart. The validity period of the information is stated.

3.5 e-Procurement quoting Semantic View

The Semantic view of this SAT consists of the following sub-set of EIRA Architecture Building Blocks (ABBs) as well as a number of predefined Solution Building Blocks (SBBs):



The Transactional Data ABBs represent at the semantic point of view the business information exchanged at the organisational point of view.

Consequently, there are 5 Transactional Data ABBs in the e-quoting semantic view:

1. Quotation framework contract request
2. Quotation framework contract
3. Quotation request
4. Quotation
5. Punch out

The Transactional Data is defined in a Data Model SBB, the BII Transaction Information Model Specification, itself associated to a Schema Level Mapping SBB, the UBL Syntax Binding specification. This is listed in the following table:

Table 3-2

Transactional Data	Transaction Information Model Specification	UBL Syntax Binding
Quotation framework contract request	BII 17014-336	17014-436
Quotation framework contract	BII 17014-337	17014-437
Quotation request	BII 17014-338	17014-438
Quotation	BII 17014-339	17014-439
Punch out	BII 17016-304	17016-404

3.6 e-Procurement quoting Technical View – Application

There is no supplementary building block in this specific e-Procurement quoting Technical View – Application in comparison with the e-Procurement core Technical View – Application provided in the e-Procurement core SAT. The core Technical View – Application specified in the e-Procurement core SAT applies.

The Representations of Transactional Data that the MMI presented in the e-Procurement core SAT has to process are the ones shown in the specific Semantic View shown in the previous paragraph of the present document.

There is no supplementary building block in this specific e-Procurement quoting Technical View – Application in comparison with the e-Procurement core Technical View – Application provided in the e-Procurement SAT.

3.7 e-Procurement quoting Technical View – Infrastructure

There is no supplementary building block in this specific e-Procurement quoting Technical View – Infrastructure in comparison with the e-Procurement core Technical View – Infrastructure provided in the e-Procurement core SAT. The core Technical View – Infrastructure specified in the e-Procurement core SAT applies.

There is no supplementary building block in this specific e-Procurement quoting Technical View – Infrastructure in comparison with the e-Procurement core Technical View – Infrastructure provided in the e-Procurement SAT.

4 REFERENCES

The references listed in the e-Procurement core SAT apply.

5 ACKNOWLEDGEMENTS

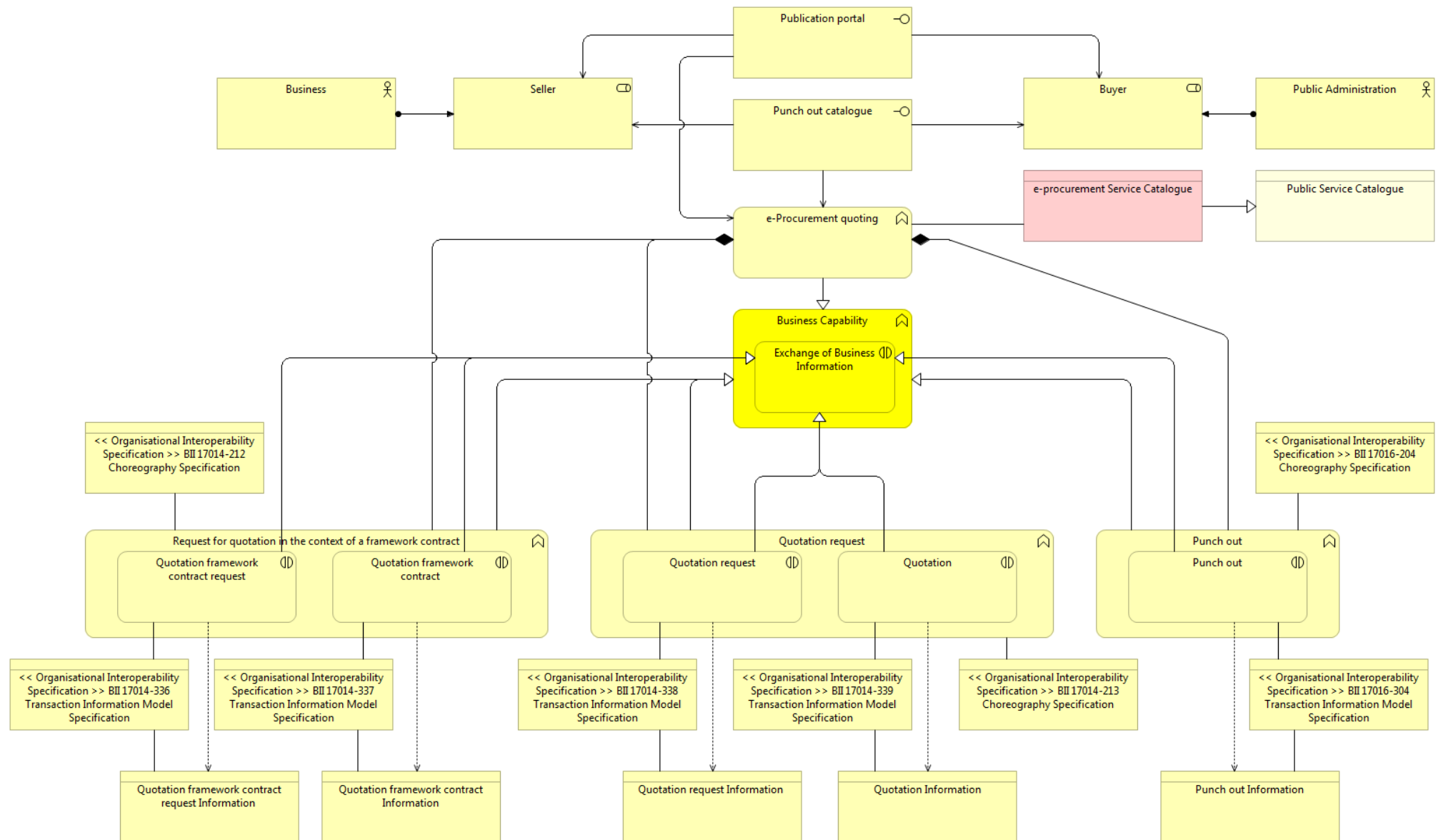
The creation of this SAT was made possible with the help of CEN Technical Committee 440 – Electronic Public Procurement. We would like to thank the following people for their input (alphabetical order):

- APOLOZAN Liviu
- BLOMMESTEIN Fred
- DRIJFHOUT Kornelis
- FROMYR Jostein
- GUASCH Cécile

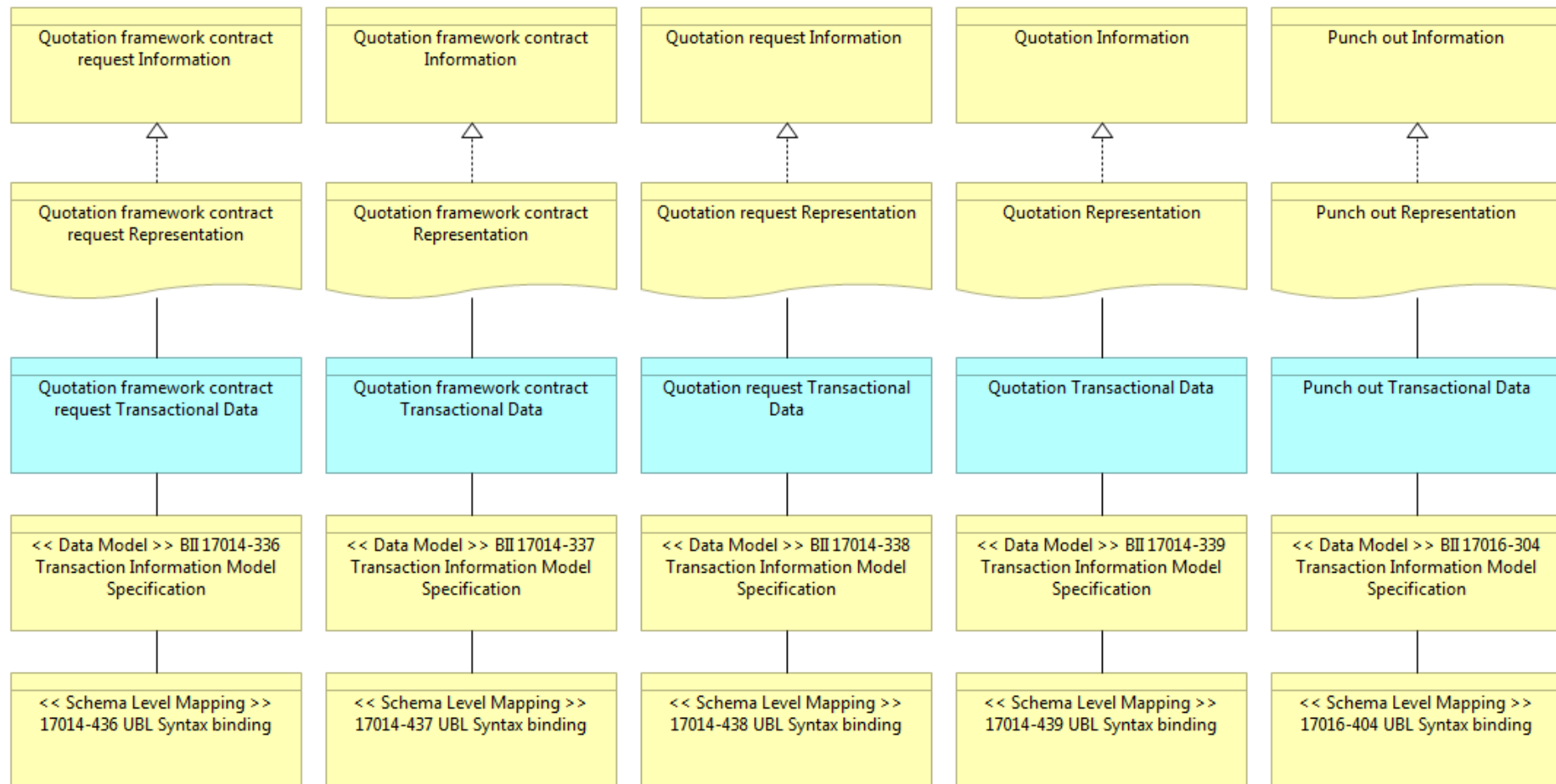
6 APPENDIX: LEGAL VIEW

There is no supplementary building block in this specific e-Procurement quoting Legal View in comparison with the e-Procurement core Legal View provided in the e-Procurement core SAT.

7 APPENDIX: ORGANISATIONAL VIEW



8 APPENDIX: SEMANTIC VIEW



9 APPENDIX: TECHNICAL VIEW – APPLICATION

There is no supplementary building block in this specific e-Procurement quoting Technical View – Application in comparison with the e-Procurement core Technical View – Application provided in the e-Procurement SAT.

10 APPENDIX: TECHNICAL VIEW – INFRASTRUCTURE

There is no supplementary building block in this specific e-Procurement quoting Technical View – Infrastructure in comparison with the e-Procurement core Technical View – Infrastructure provided in the e-Procurement SAT.