SAT
For
e-Procurement accessing
[EIRA extension]

e-Procurement accessing Solution Architecture Template (SAT)

Change control

Modification	Details
Version 1.0.0 beta	
Initial version	

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1 INTRODUCTION

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

This SAT is based on EIRA v2.0.0, 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
accessing v1.0.0 beta

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1.1 Purpose of this document

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

The e-Procurement accessing business capability covers the electronic access to tender documents and specifications, including electronic access to supporting documents for suppliers in the preparation of a Tender response, e.g. clarifications, questions and answers. This includes expressing interest in a business opportunity to be listed in the procurement procedure.

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 accessing solution.
Policy maker	Policy makers studying the implications due to policy changes in the area of e-Procurement, accessing part

Public Administration / Members States	Public Administrations of the European Union that need to have a holistic view of the e-Procurement accessing interoperability architecture
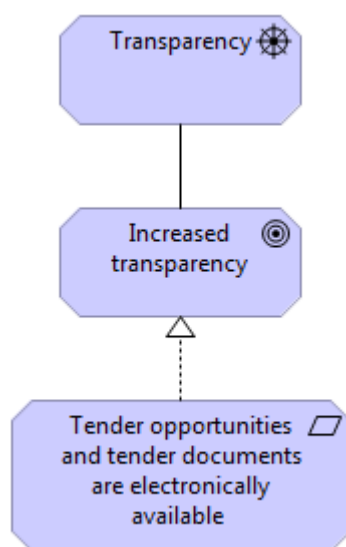
3 E-PROCUREMENT ACCESSING INTEROPERABILITY MAPPED TO THE EIRA

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

The following specific requirement complements the general ones specified in the e-Procurement core SAT and must be respected by the e-Procurement accessing solution: *tender opportunities and tender documents are electronically available*.

3.2 How to use this SAT

The present SAT is specifically related to the accessing business capability of e-Procurement. The present document has to be used in complement to the SAT related to core 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 accessing SAT addresses the architecture that is specific to the e-Procurement accessing 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 accessing 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 accessing and uses the two SATs as guidance.

3.2.1 e-Procurement accessing Gap Analysis use case

Using the two e-Procurement core and e-Procurement accessing 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 accessing 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 accessing 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.
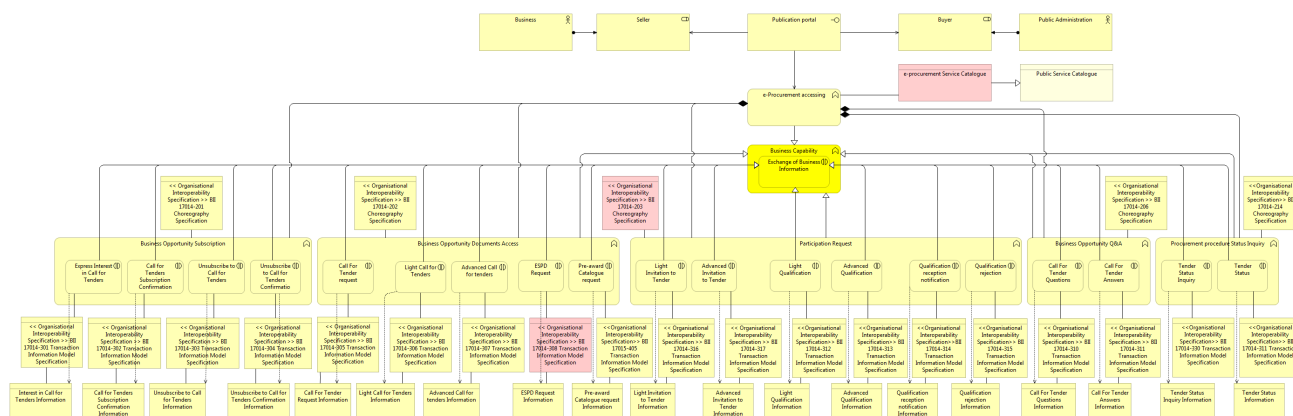
3.3 e-Procurement accessing Legal View

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

3.4 e-Procurement accessing Organisational View

The Organisational view for the e-Procurement accessing 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 accessing business capability is provided using the Publication Portal Service Delivery Model and is listed in the e-Procurement Service Catalogue. A Contracting Authority (Buyer) offers the possibility to Economic Operators (Sellers) to get (access to) the procurement documents belonging to one interesting business opportunity. The Economic Operator expresses his interest in the documents from one specific business opportunity. The Contracting Authority provides (access to) the belonging documents.

The Publication Portal is used by the Buyer and by the Seller to access the tender documents and specifications.

The e-Procurement accessing Business Capability is made up of the following refined Business Capabilities. For each business capability here after, the Exchanges of Business Information it involves are also given:

1. Business Opportunity Subscription

   Exchanges of Business Information:

   a. Express Interest in Call for Tenders

   b. Call for Tenders Subscription Confirmation

   c. Unsubscribe to Call for Tenders

   d. Unsubscribe to Call for Tenders Confirmation

2. Business Opportunity Documents Access

   Exchanges of Business Information:

   a. Call For Tender request

   b. Light Call for Tenders

   c. Advanced Call for tenders

   d. ESPD Request

   e. Pre-award catalogue request

3. Participation Request

   Exchanges of Business Information:

a. Light Qualification

b. Advanced Qualification

c. Qualification reception notification

d. Qualification rejection

e. Light Invitation to Tender

f. Advanced Invitation to Tender

4. Business Opportunity Q&A

   Exchanges of Business Information:

   a. Call For Tender Questions

   b. Call For Tender Answers

5. Procurement procedure status inquiry

   Exchanges of Business Information

   a. Tender Status Inquiry

   b. Tender Status

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
Business Opportunity Subscription	BII 17014-201
Express Interest in Call for Tenders	BII 17014-301
Call for Tenders Subscription Confirmation	BII 17014-302
Unsubscribe to Call for Tenders	BII 17014-303
Unsubscribe to Call for Tenders Confirmation	BII 17014-304
Business Opportunity Documents Access	BII 17014-202
Call For Tender request	BII 17014-305
Light Call for Tenders	BII 17014-306
Advanced Call for tenders	BII 17014-307
ESPD Request	BII 17014-308
Pre-award Catalogue request	BII 17015-405
Participation Request	BII 17014-203
Light Qualification	BII 17014-312
Advanced Qualification	BII 17014-313
Qualification reception notification	BII 17014-314
Qualification rejection	BII 17014-315
Light Invitation to Tender	BII 17014-316
Advanced Invitation to Tender	BII 17014-317
Business Opportunity Q&A	BII 17014-206
Call For Tender Questions	BII 17014-310
Call For Tender Answers	BII 17014-311
Procurement procedure Status Inquiry	BII 17014-214
Tender Status Inquiry	BII 17014-330
Tender Status	BII 17014-311

Business Opportunity Subscription

Business opportunity subscription choreography describes the process and its variants by which the economic operator can subscribe to a tendering procedure to be able to access the procedure documents and be informed of their updates when a business opportunity is relevant to him. It also allows the economic operator to unsubscribe and no more receive updates.

Express Interest in Call for Tenders

Express interest in Call for Tender BII transaction provides the set of interoperability specifications to support the electronic exchange of information of the expression of interest of an economic operator to a tendering procedure.

Call for Tenders Subscription Confirmation

Call for tender subscription confirmation BII transaction provides the set of interoperability specifications to support the electronic exchange of the confirmation by the contracting body that the economic operator has been subscribed to the tendering procedure in which he expressed his interest.

Unsubscribe to Call for Tenders

Unsubscribe to call for tenders BII transaction provides the set of interoperability specifications to support the electronic exchange of the un-subscription to updates of the tendering documents by which the economic operator unsubscribes to the updates of a tendering procedure.

Unsubscribe to Call for Tenders Confirmation

Unsubscribe to call for tenders confirmation BII transaction provides the set of interoperability specifications to support the electronic exchange of the confirmation by the contracting body that an Economic operator has been unsubscribed from a tendering procedure) by which the economic operator is informed that his un-subscription has been taken into account.

Business Opportunity Documents Access

Business opportunity document access describes the process and its variants by which the contracting body provides access to the belonging documents allowing for the economic operator to participate in a tendering process.

Many variants exist in this choreography where the contracting body can build a tendering procedure on basis of unstructured documents or more structured information, expressing the qualification requirements by means of unstructured attached document or an ESPD request and tendering specifications in the form of an advanced call for tender request or a pre-award catalogue request.

Call for tender request

Call for tender request BII transaction provides the set of interoperability specifications to support the electronic exchange of a request of a seller (economic operator) to receive all documents necessary to participate in a tendering process.

Light call for tenders

Light call for tender BII transaction provides the set of interoperability specifications to support the electronic exchange of a structured electronic document with unstructured attachments providing the information necessary to participate in a tendering process.

Advanced call for tenders

Advanced call for tender BII transaction provides the set of interoperability specifications to support the electronic exchange of a structured electronic document providing the information necessary to participate in a tendering process.

ESPD request

ESPD BII transaction provides the set of interoperability specifications to support the electronic exchange of a structured electronic business document for requesting qualification information through a European Single procurement Document (ESPD) (conform to the ESPD Request). Directive 2014/24/EU Article 59.

Pre-award Catalogue request

Pre award catalogue request provides the set of interoperability specifications to support the electronic exchange of requirements on items to be purchased by a buyer in a structured format as part of a call for tenders.

Participation Request

See next section.

Business Opportunity Q&A

Business opportunity Q&A choreography describes the process and its variants by which the seller (economic operator) can ask questions to the buyer (Contracting body) and by which the buyer can answer them by means of structured electronic messaging.

Call for tender questions

Call for tender questions BII transaction provides the set of interoperability specifications to support the electronic exchange of questions around a tendering procedure.

Call for tender answers

Call for tender answers BII transaction provides the set of interoperability specifications to support the electronic exchange of answers provided to questions around a tendering procedure.

Procurement procedure status inquiry

Procurement procedure status inquiry choreography describes the process and its variants by which the buyer (Contracting body) allows the seller (economic operator) to get a status update on a business opportunity (procurement procedure).

Tender Status inquiry

Tender status inquiry BII transaction provides the set of interoperability specifications to support the electronic exchange of a structured document for request the status update of a specific procurement procedure.

Tender Status

Tender status BII transaction provides the set of interoperability specifications to support the electronic exchange of a structured document for providing the status update of a specific procurement procedure.

3.5 e-Procurement accessing 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 17 Transactional Data ABBs in the e-Procurement accessing semantic view:

1. Express Interest in Call for Tenders

2. Call for Tenders Subscription Confirmation

3. Unsubscribe to Call for Tenders

4. Unsubscribe to Call for Tenders Confirmation

5. Call For Tender request

6. Light Call for Tenders

7. Advanced Call for tenders

8. ESPD Request

9. Pre-award catalogue request

10. Light Qualification

11. Advanced Qualification

12. Qualification reception notification

13. Qualification rejection

14. Light Invitation to Tender

15. Advanced Invitation to Tender

16. Call For Tender Questions

17. Call For Tender Answers

18. Tender Status Inquiry

19. Tender Status

Each 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. These are listed in the following table:

Table 3-2

Transactional Data	Transaction Information Model Specification	UBL Syntax Binding
Express Interest in Call for Tenders	BII 17014-301	17014-401
Call for Tenders Subscription Confirmation	BII 17014-302	17014-402
Unsubscribe to Call for Tenders	BII 17014-303	17014-403
Unsubscribe to Call for Tenders Confirmation	BII 17014-304	17014-404
Call For Tender request	BII 17014-305	17014-405
Light Call for Tenders	BII 17014-306	17014-406
Advanced Call for tenders	BII 17014-307	17014-407
ESPD Request	BII 17014-308	17014-408
Pre-award catalogue request	BII 17015-303	17015-405
Light Qualification	BII 17014-312	17014-412
Advanced Qualification	BII 17014-313	17014-413
Qualification reception notification	BII 17014-314	17014-414
Qualification rejection	BII 17014-315	17014-415
Light Invitation to Tender	BII 17014-316	17014-416
Advanced Invitation to Tender	BII 17014-317	17014-417
Call For Tender Questions	BII 17014-310	17014-410
Call For Tender Answers	BII 17014-311	17014-411
Tender Status Inquiry	BII 17014-330	17014-430
Tender Status	BII 17014-311	17014-411

3.6 e-Procurement accessing Technical View – Application

There is one supplementary building block in this e-Procurement accessing Technical View – Application in comparison with e-Procurement core Technical View – Application provided in the e-Procurement core SAT: the ESPD Transformation Service, which is part of the Data Transformation Service.
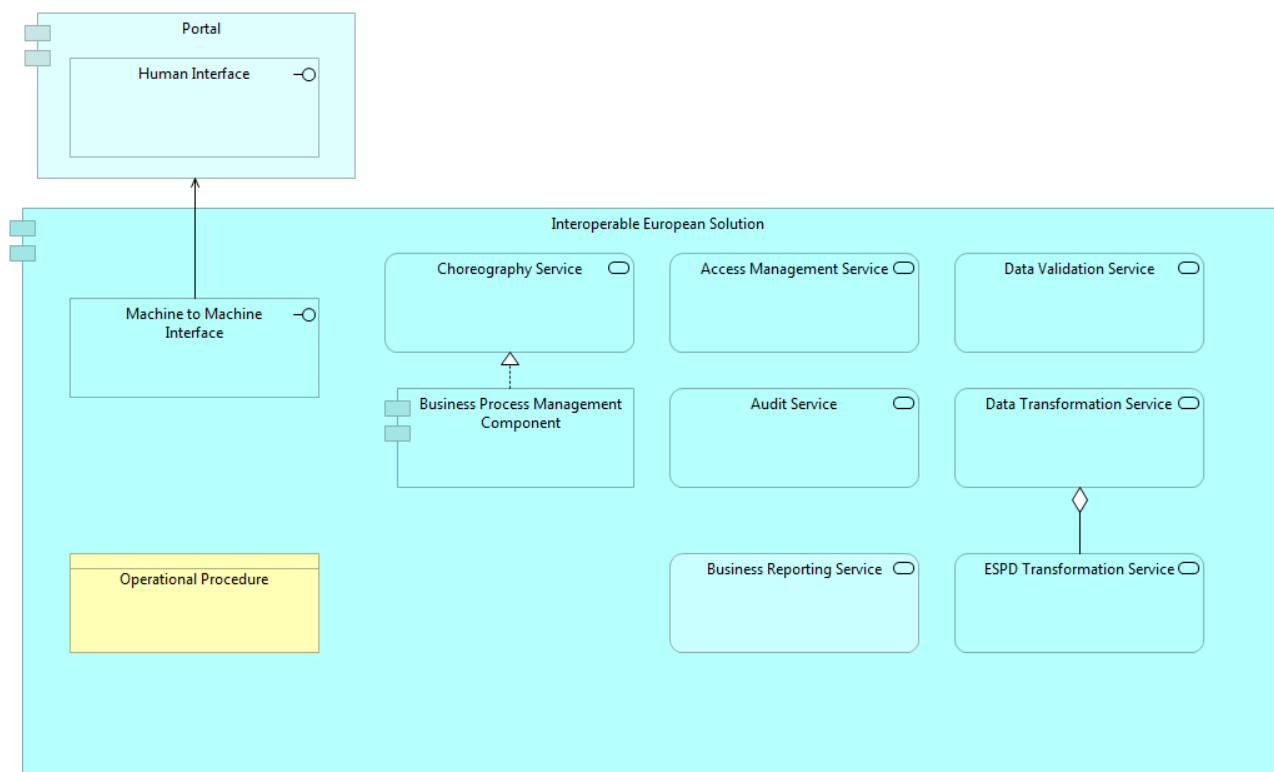
The Representations of Transactional Data that the MMI has to process are the ones shown in the specific Semantic View shown in the previous paragraph of the present document.

3.7 e-Procurement accessing Technical View – Infrastructure

There is no supplementary building block in this specific e-Procurement accessing 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 accessing 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 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 accessing 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

Interest in Call for Tenders Information	Call for Tenders Subscription Confirmation Information	Unsubscribe to Call for Tenders Information	Unsubscribe to Call for Tenders Confirmation Information	Call For Tender Request Information	Light Call for Tenders Information	Advanced Call for tenders Information	ESPD Request Information	Pre-award catalogue request Information
Interest in Call for Tenders Representation	Call for Tenders Subscription Confirmation Representation	Unsubscribe to Call for Tenders Representation	Unsubscribe to Call for Tenders Confirmation Representation	Call For Tender Request Representation	Light Call for Tenders Representation	Advanced Call for tenders Representation	ESPD Request Representation	Pre-award catalogue request Representation

represents

Interest in Call for Tenders Transactional Data	Call for Tenders Subscription Confirmation Transactional Data	Unsubscribe to Call for Tenders Transactional Data	Unsubscribe to Call for Tenders Confirmation Transactional Data	Call For Tender Request Transactional Data	Light Call for Tenders Transactional Data	Advanced Call for tenders Transactional Data	ESPD Request Transactional Data	Pre-award catalogue request Transactional Data

defined by

<< Data Model >> BII 17014-301 Transaction Information Model Specification	<< Data Model >> BII 17014-302 Transaction Information Model Specification	<< Data Model >> BII 17014-303 Transaction Information Model Specification	<< Data Model >> BII 17014-304 Transaction Information Model Specification	<< Data Model >> BII 17014-305 Transaction Information Model Specification	<< Data Model >> BII 17014-306 Transaction Information Model Specification	<< Data Model >> BII 17014-307 Transaction Information Model Specification	<< Data Model >> BII 17014-308 Transaction Information Model Specification	<< Data Model >> BII 17015-303 Transaction Information Model Specification
<< Schema Level Mapping >> 17014-401 UBL Syntax binding	<< Schema Level Mapping >> 17014-402 UBL Syntax binding	<< Schema Level Mapping >> 17014-403 UBL Syntax binding	<< Schema Level Mapping >> 17014-404 UBL Syntax binding	<< Schema Level Mapping >> 17014-405 UBL Syntax binding	<< Schema Level Mapping >> 17014-406 UBL Syntax binding	<< Schema Level Mapping >> 17014-407 UBL Syntax binding	<< Schema Level Mapping >> 17014-408 UBL Syntax binding	<< Schema Level Mapping >> 17015-405 UBL Syntax binding

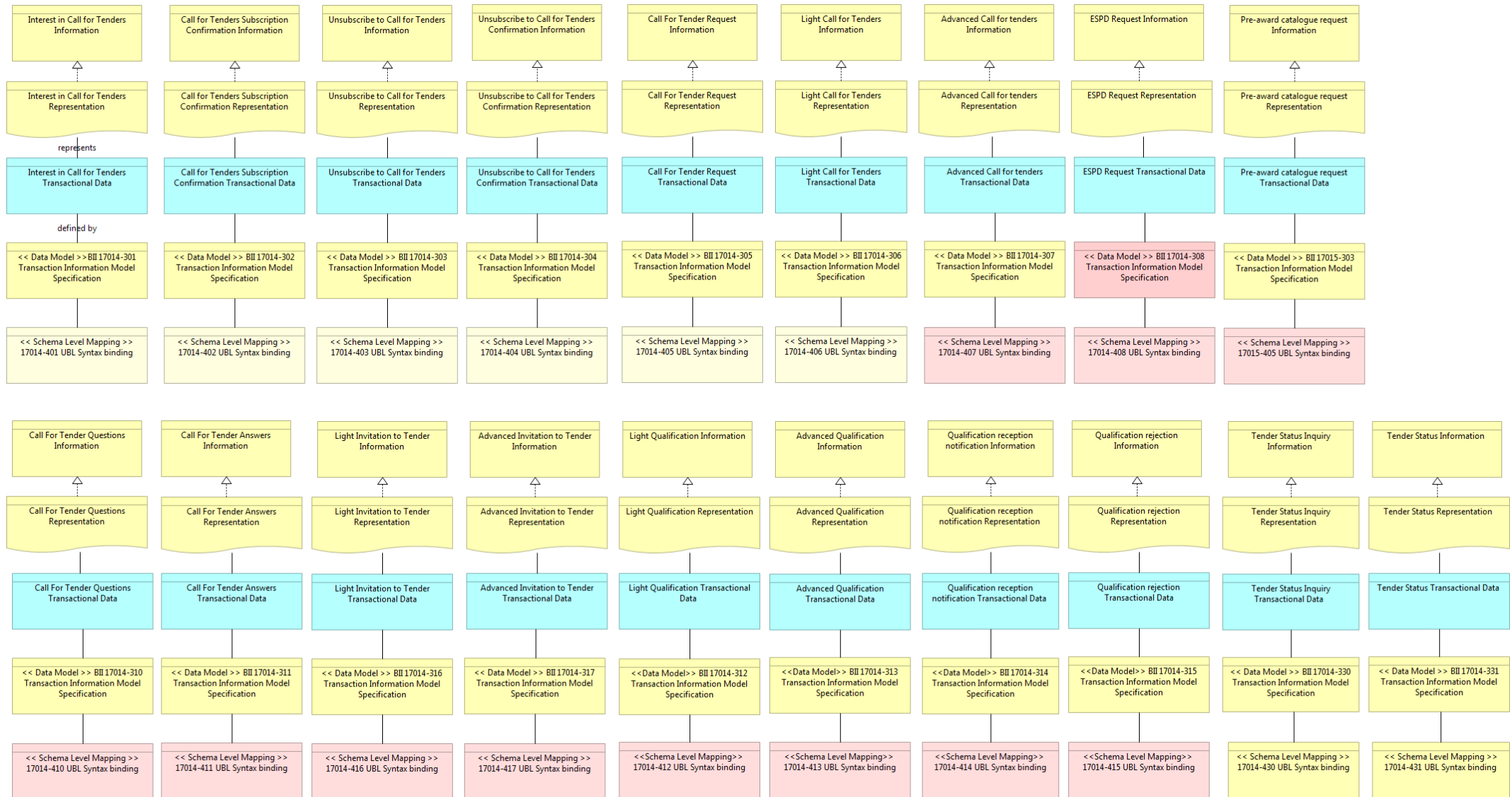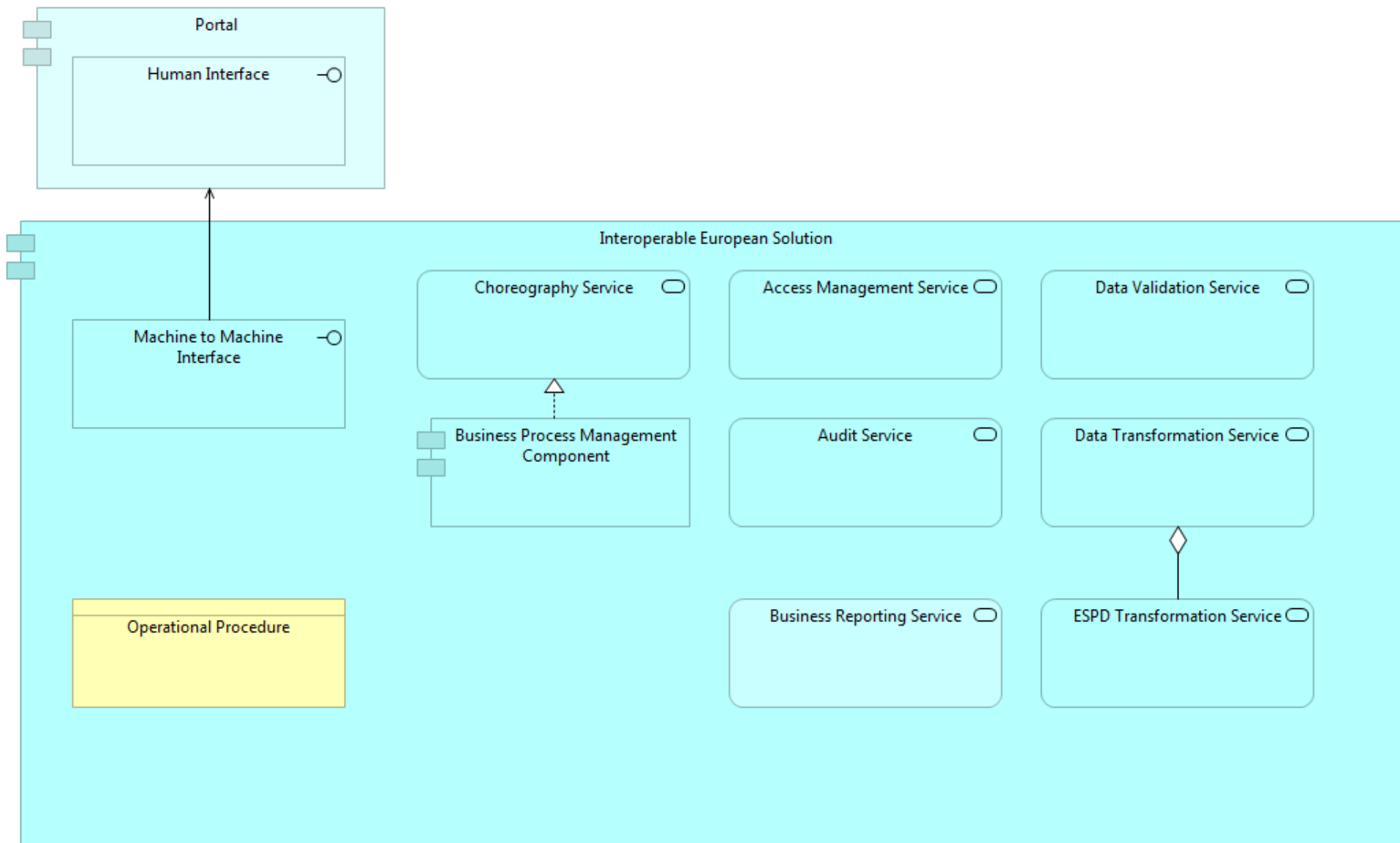| Call For Tender Questions Information	Call For Tender Answers Information	Light Invitation to Tender Information	Advanced Invitation to Tender Information	Light Qualification Information	Advanced Qualification Information	Qualification reception notification Information	Qualification rejection Information	Tender Status Inquiry Information	Tender Status Information
Call For Tender Questions Representation	Call For Tender Answers Representation	Light Invitation to Tender Representation	Advanced Invitation to Tender Representation	Light Qualification Representation	Advanced Qualification Representation	Qualification reception notification Representation	Qualification rejection Representation	Tender Status Inquiry Representation	Tender Status Representation
Call For Tender Questions Transactional Data	Call For Tender Answers Transactional Data	Light Invitation to Tender Transactional Data	Advanced Invitation to Tender Transactional Data	Light Qualification Transactional Data	Advanced Qualification Transactional Data	Qualification reception notification Transactional Data	Qualification rejection Transactional Data	Tender Status Inquiry Transactional Data	Tender Status Transactional Data
<< Data Model >> BII 17014-310 Transaction Information Model Specification	<< Data Model >> BII 17014-311 Transaction Information Model Specification	<< Data Model >> BII 17014-316 Transaction Information Model Specification	<< Data Model >> BII 17014-317 Transaction Information Model Specification	<<Data Model>> BII 17014-312 Transaction Information Model Specification	<<Data Model>> BII 17014-313 Transaction Information Model Specification	<<Data Model>> BII 17014-314 Transaction Information Model Specification	<<Data Model>> BII 17014-315 Transaction Information Model Specification	<< Data Model >> BII 17014-330 Transaction Information Model Specification	<<Data Model>> BII 17014-331 Transaction Information Model Specification
<< Schema Level Mapping >> 17014-410 UBL Syntax binding	<< Schema Level Mapping >> 17014-411 UBL Syntax binding	<< Schema Level Mapping >> 17014-416 UBL Syntax binding	<< Schema Level Mapping >> 17014-417 UBL Syntax binding	<<Schema Level Mapping>> 17014-412 UBL Syntax binding	<<Schema Level Mapping>> 17014-413 UBL Syntax binding	<<Schema Level Mapping>> 17014-414 UBL Syntax binding	<<Schema Level Mapping>> 17014-415 UBL Syntax binding	<< Schema Level Mapping >> 17014-430 UBL Syntax binding	<< Schema Level Mapping >> 17014-431 UBL Syntax binding

9 APPENDIX: TECHNICAL VIEW – APPLICATION

10 APPENDIX: TECHNICAL VIEW – INFRASTRUCTURE

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