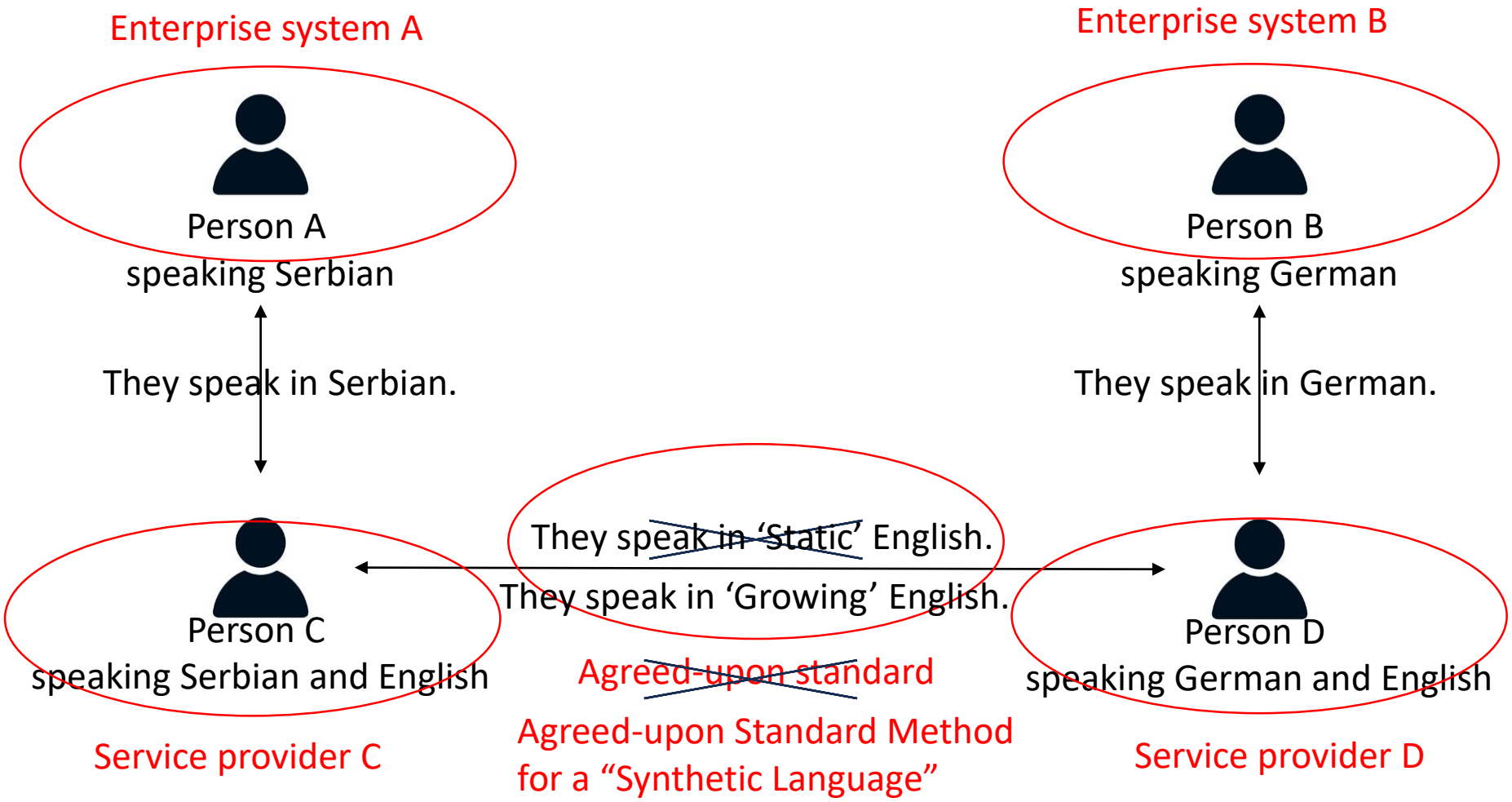
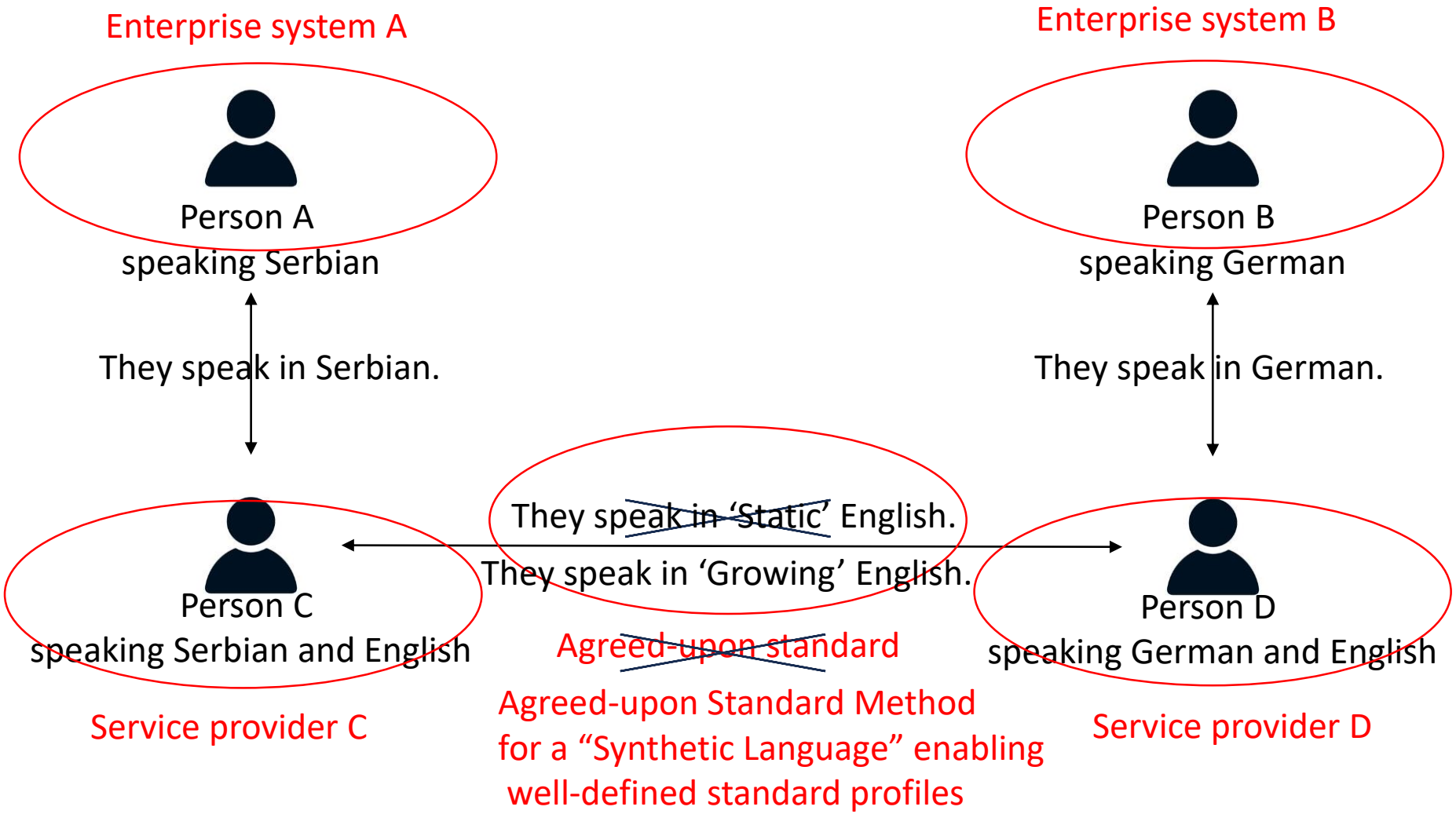
A New Integration Approach to Achieving Interoperability



A New Integration Approach to Achieving Interoperability



Creating a Synthetic Language

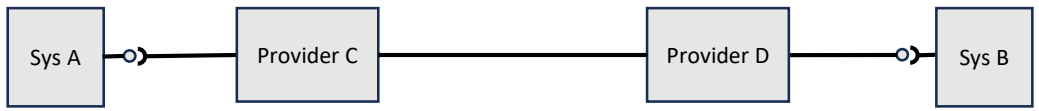
What is it?

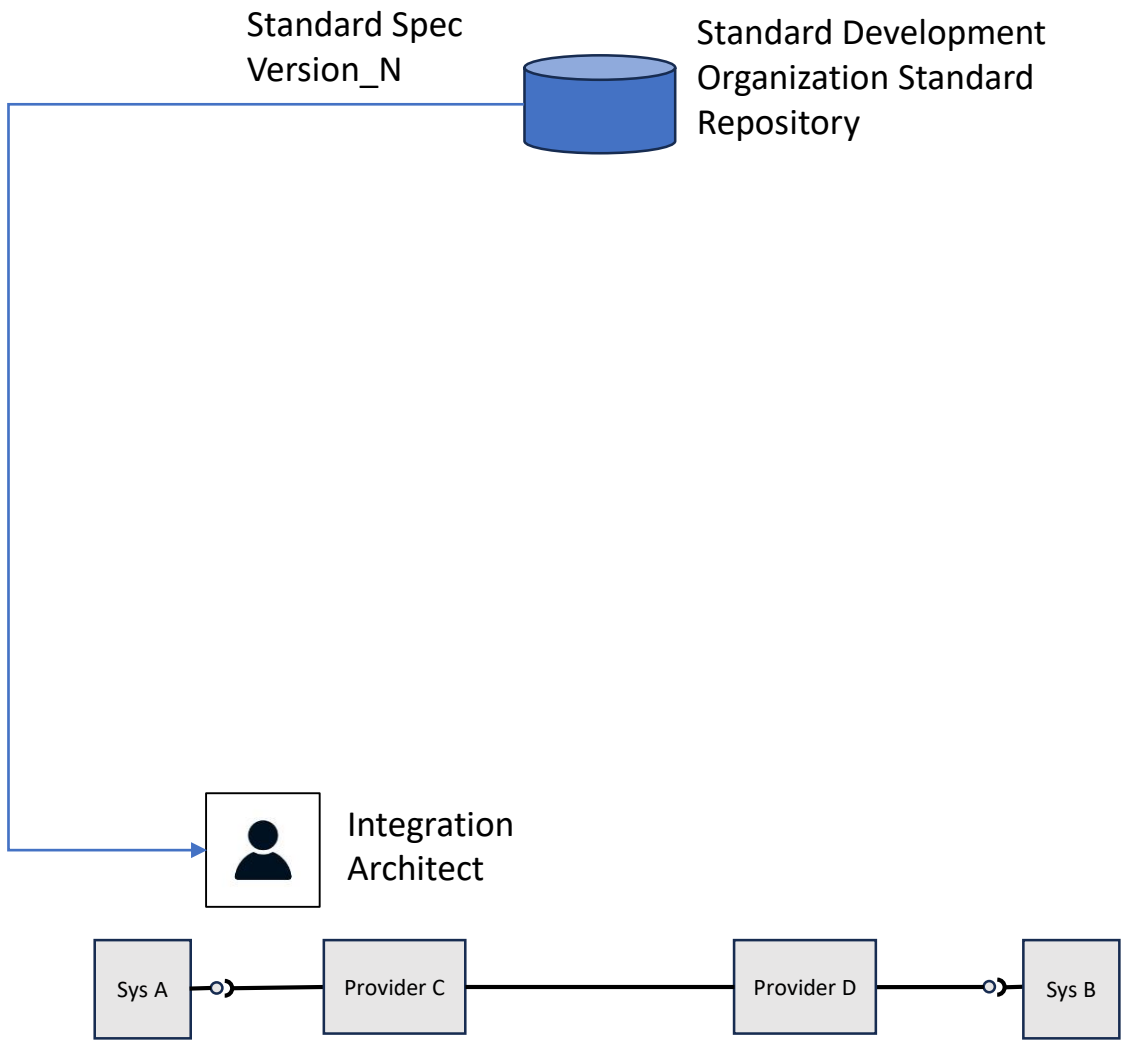
“Synthetic Language” – Library and Method

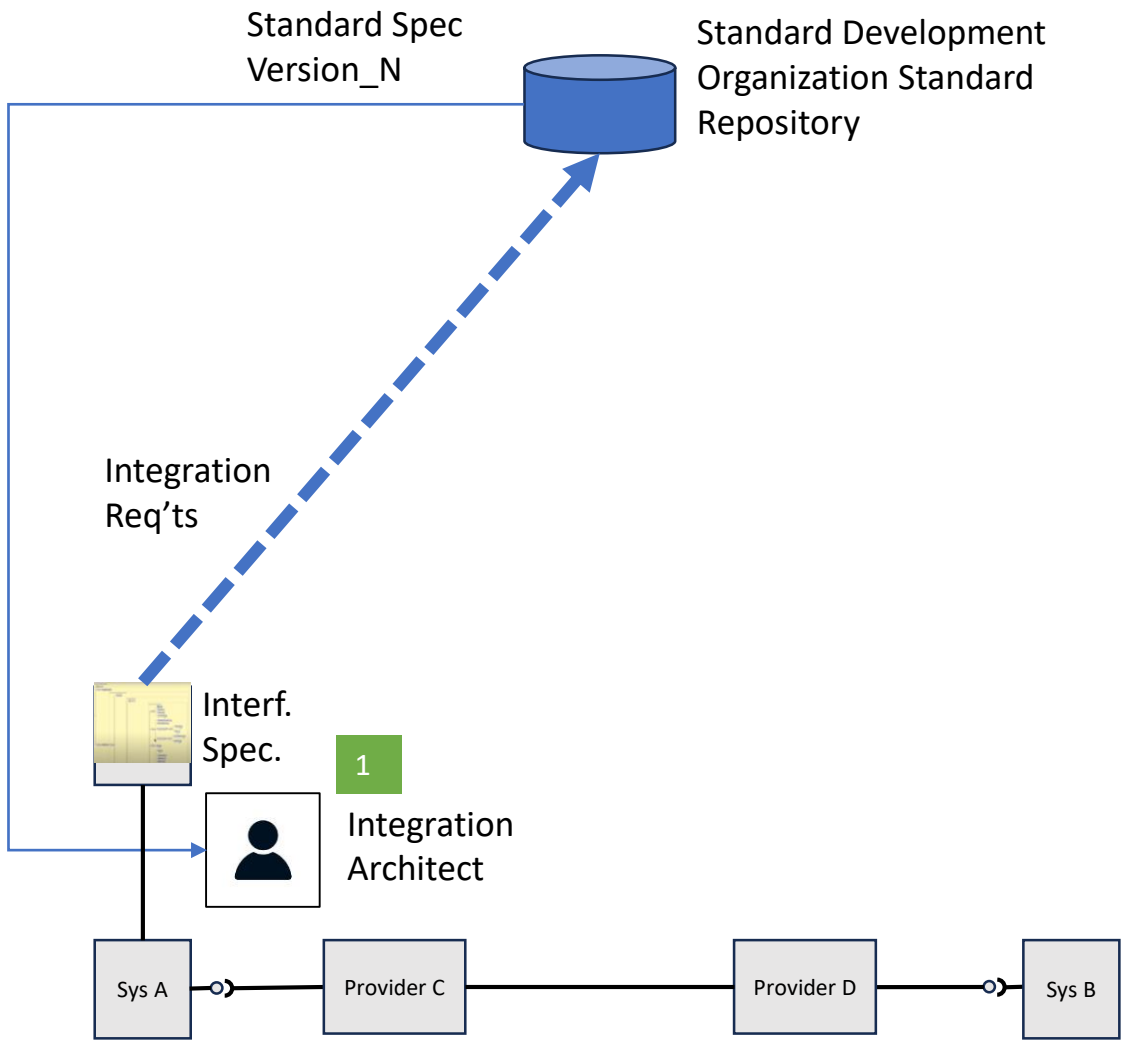
- **“Synthetic Language”** is what we create, just like the “Growing English”
  - Very dynamic **Library** of standard elements, accepting new ones immediately
  - Focus on **Standard Profiles,** not a Standard
  - Focus on **Methods for managing** the library, mappings, and profiling

“Synthetic Language” Library and Method

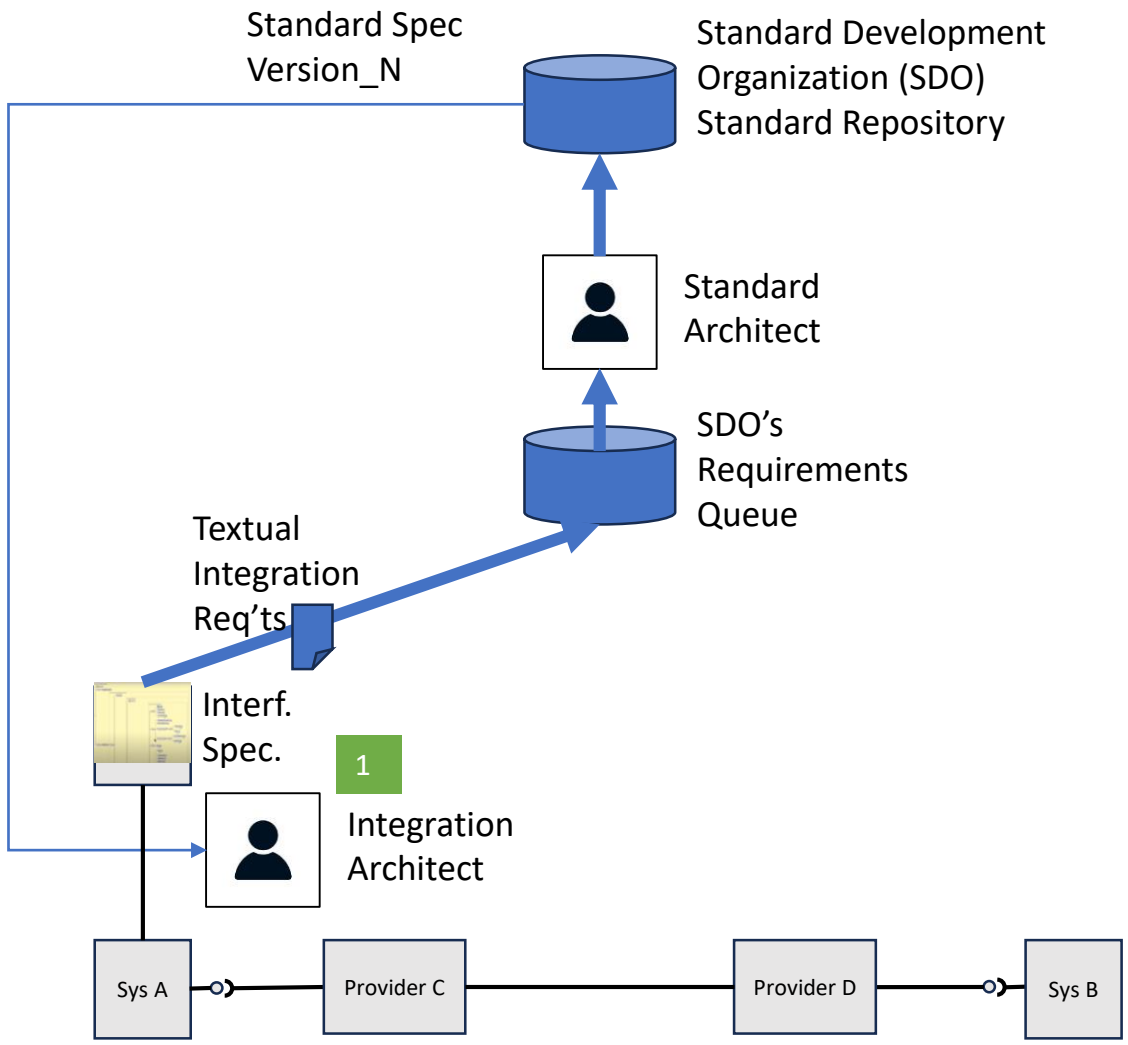
- A library and a method that **provide** new capabilities:
  - **Analysis of app interfaces and their conversion** into data exchange elements
  - **Management of library of data exchange elements** additions and updates
  - **Management of data exchange context** for the library terms usage
  - **Management of mapping specification for data exchange** source-target terms
  - **Message profiling design** for data exchange/integration scenario


Sys A
Provider C
Provider D
Sys B

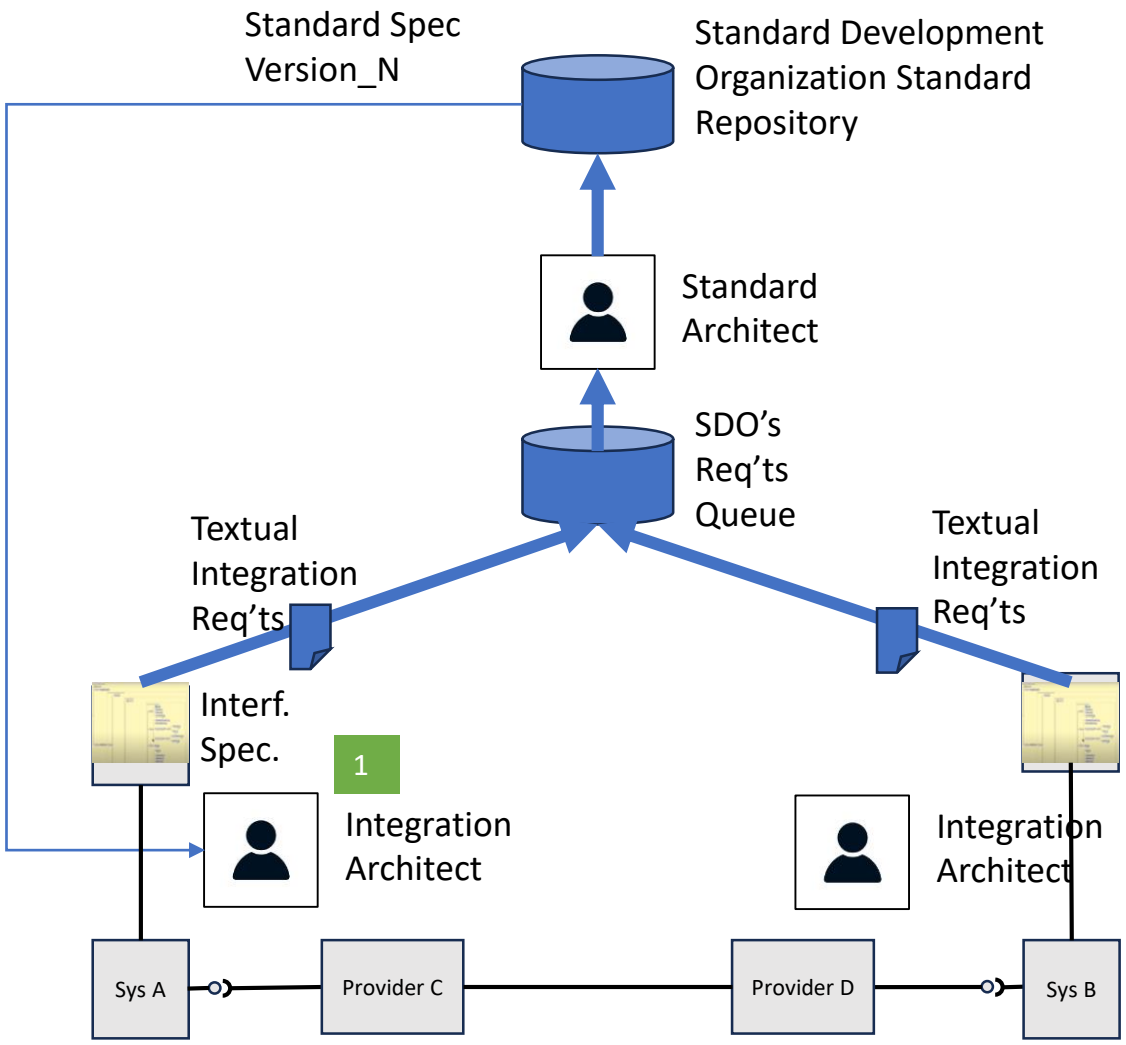

Standard Spec
Version_N
Standard Development
Organization Standard
Repository
Integration
Architect
Sys A
Provider C
Provider D
Sys B



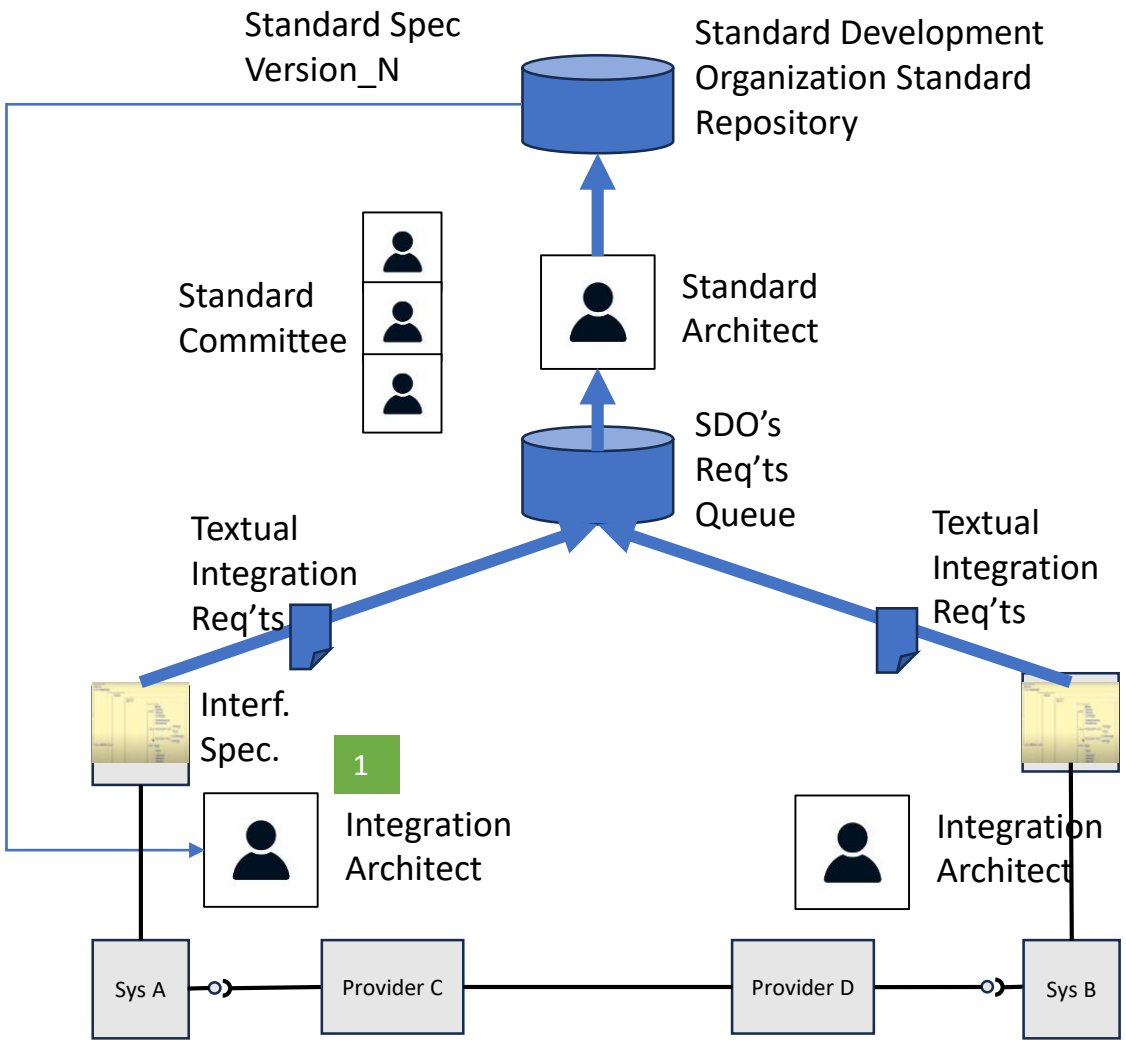
1 **Analysis of Interfaces**



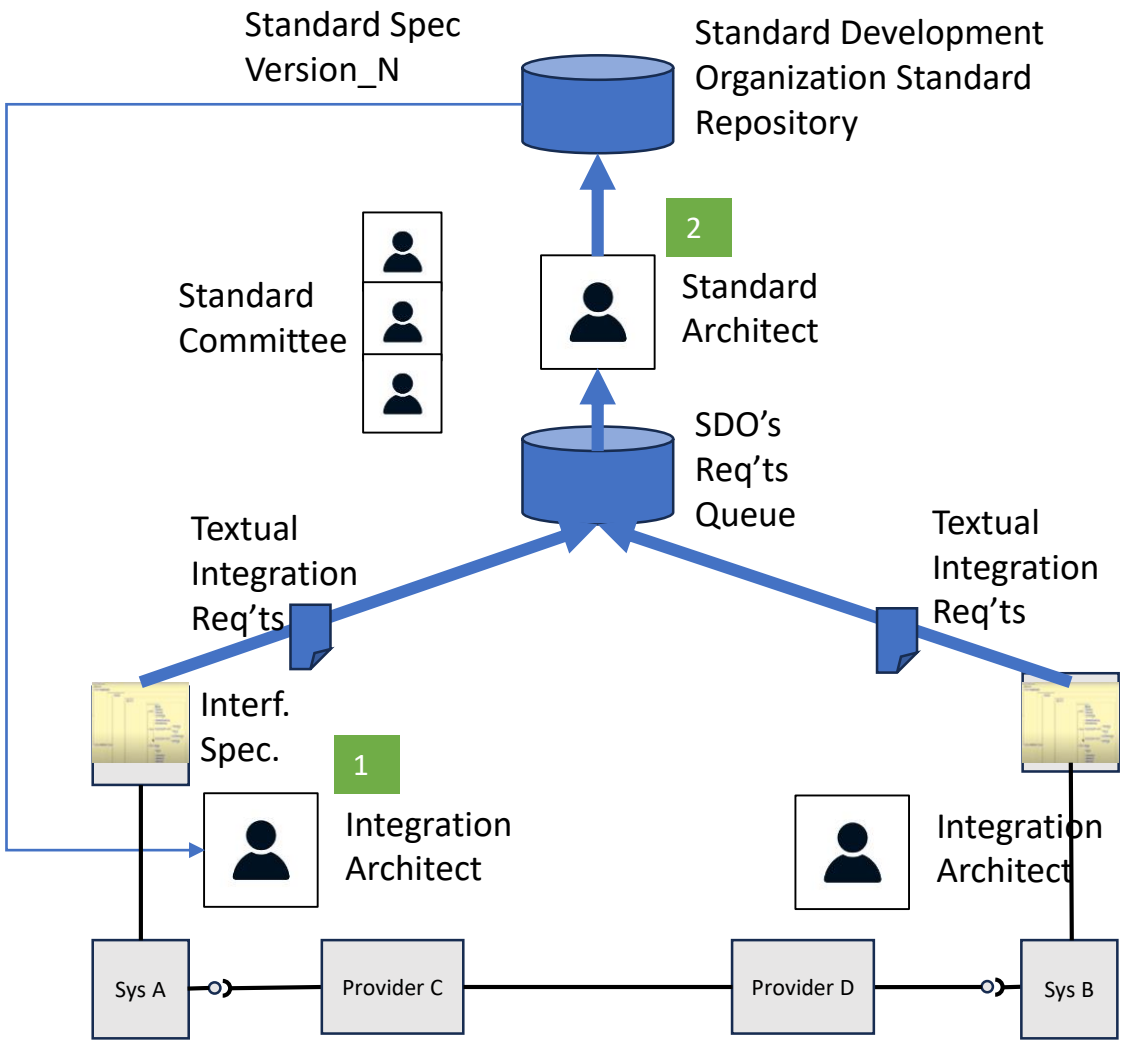
1 **Analysis of Interfaces**



1 Analysis of Interfaces

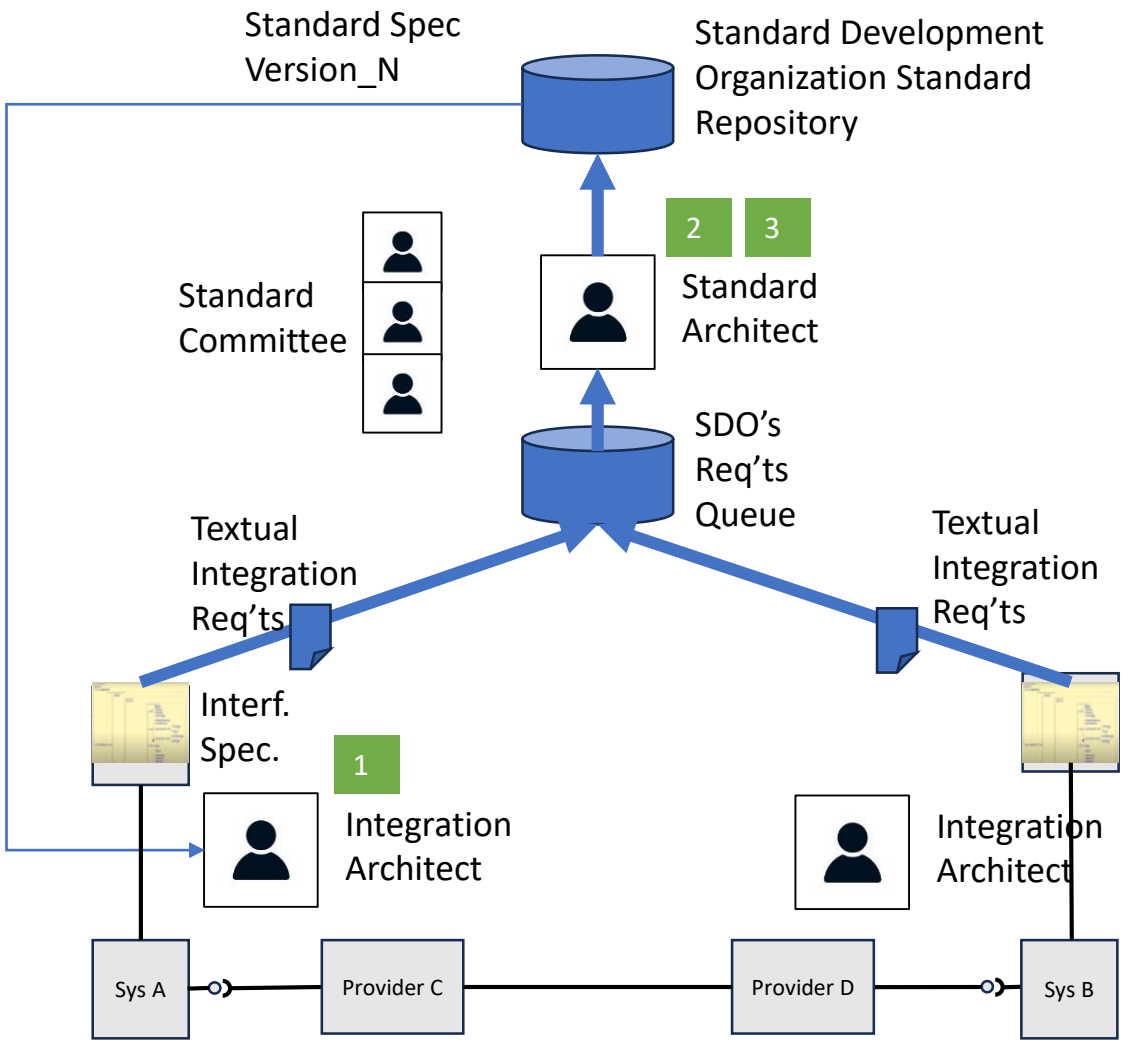


1 Analysis of Interfaces



1 Analysis of Interfaces

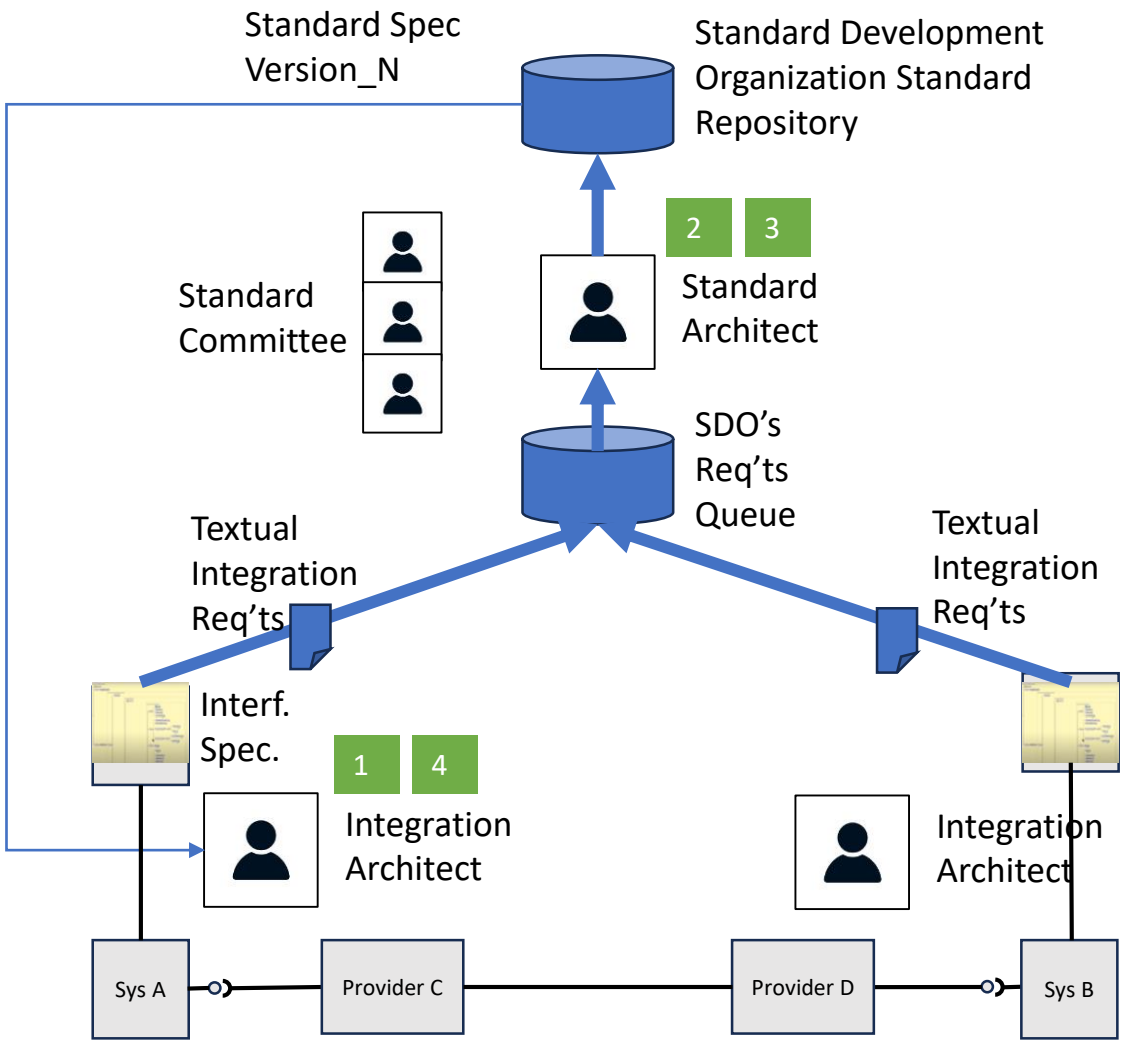
2 Mngmt. of compon'ts



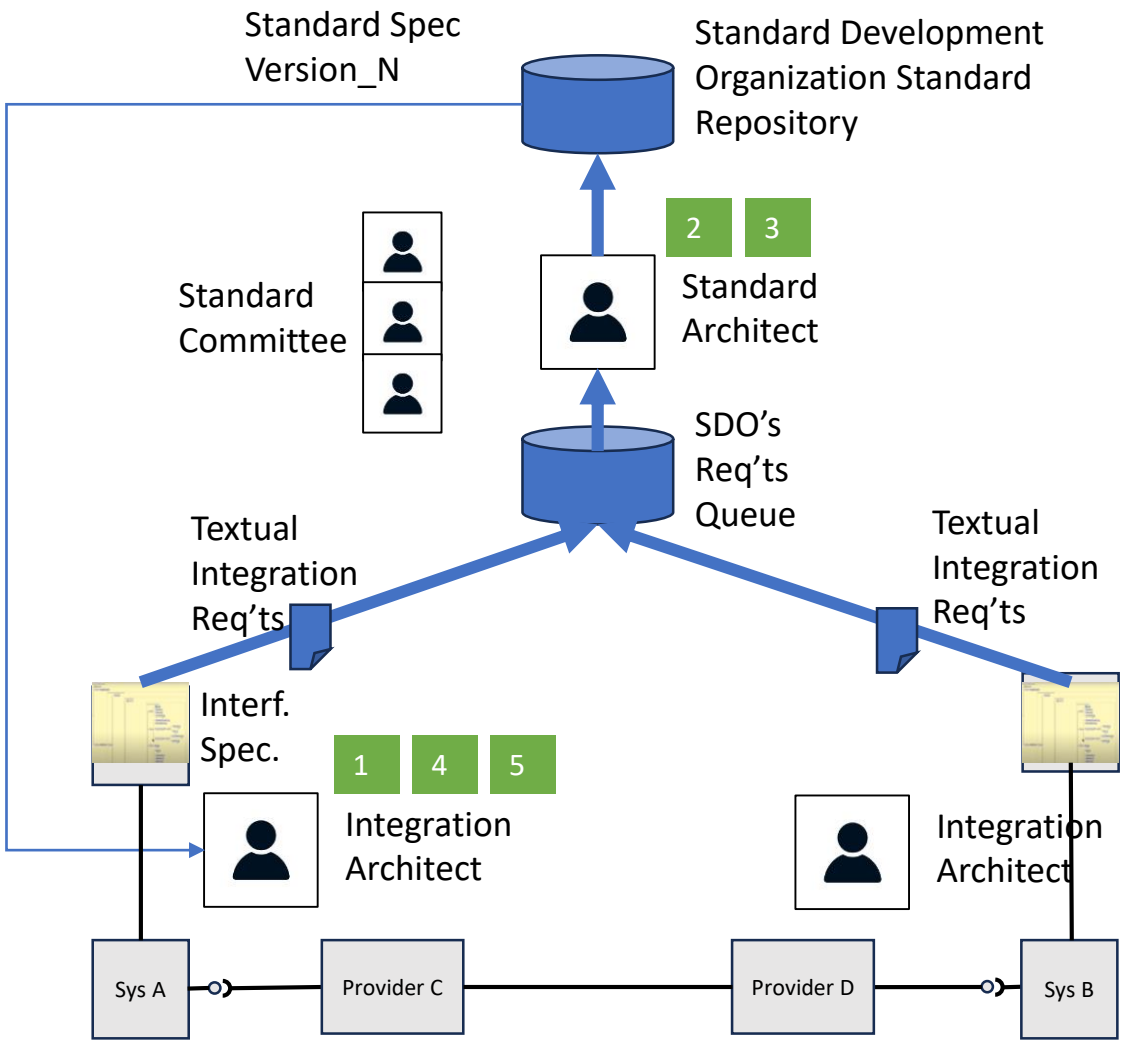
1 Analysis of Interfaces

2 Mngmt. of

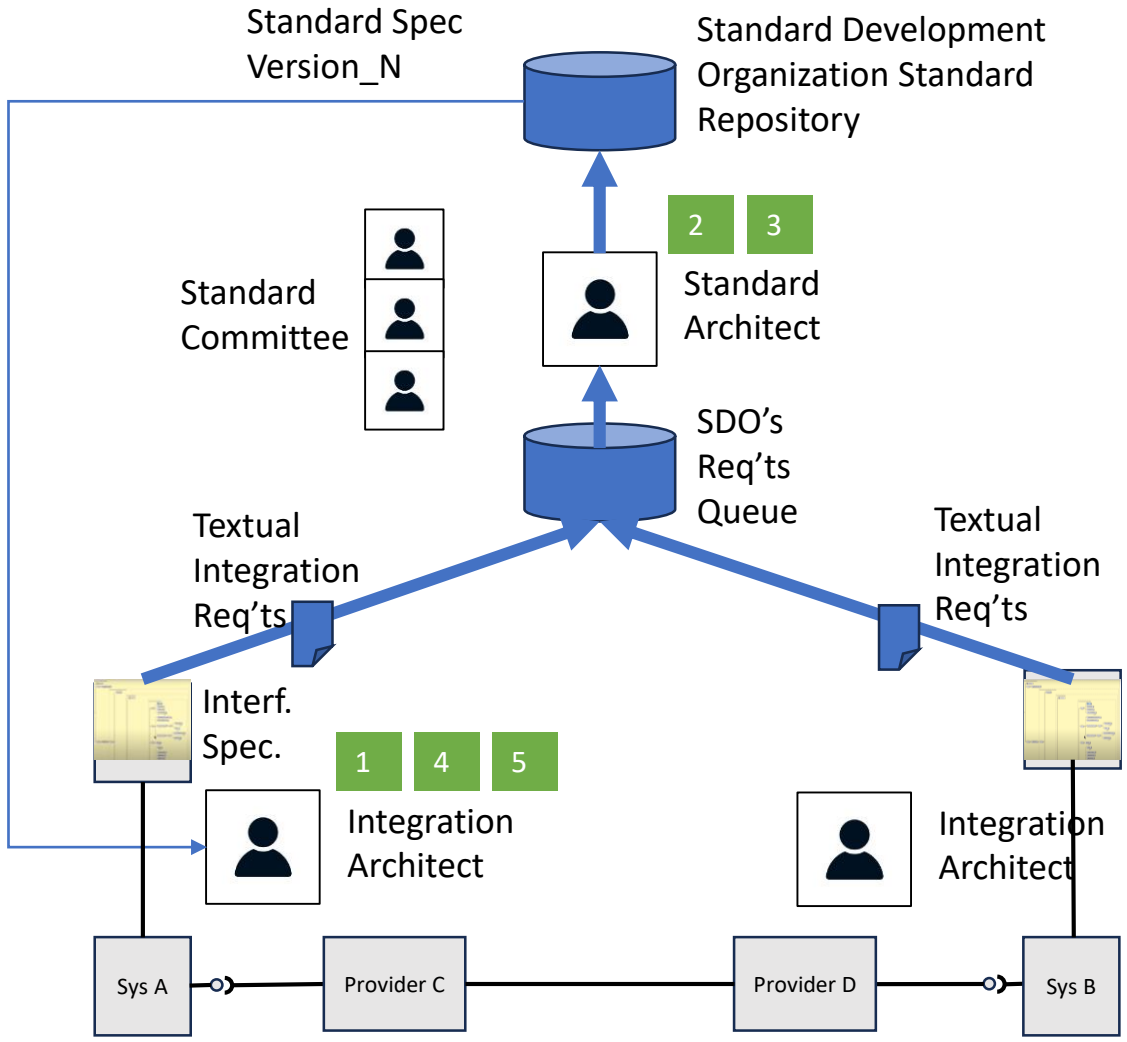
3 Mngmt. of context

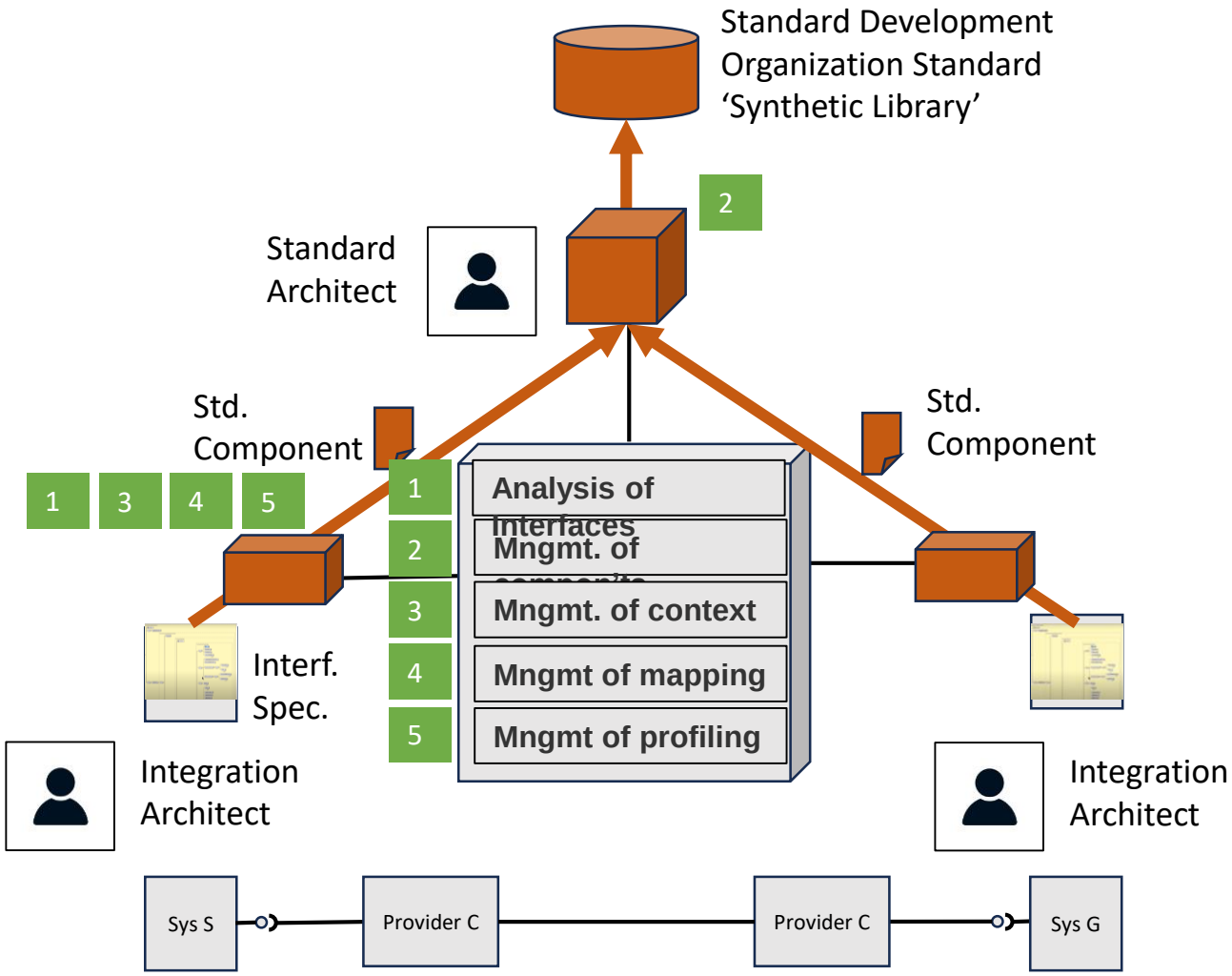


1	Analysis of Interfaces
2	Mngmt. of
3	Mngmt. of context
4	Mngmt of mapping



1	Analysis of Interfaces
2	Mngmt. of
3	Mngmt. of context
4	Mngmt of mapping
5	Mngmt of profiling


Standard Spec
Version_N
Standard Development
Organization Standard
Repository
2
3
Standard
Committee
Standard
Architect
SDO's
Req'ts
Queue
Textual
Integration
Req'ts
Textual
Integration
Req'ts
Interf.
Spec.
1
4
5
Integration
Architect
Integration
Architect
Sys A
Provider C
Provider D
Sys B


Standard Development
Organization Standard
'Synthetic Library'
2
Standard
Architect
Std.
Component
Std.
Component
1
3
4
5
1
2
3
4
5
Analysis of
Interfaces
Mngmt. of
Mngmt. of context
Mngmt of mapping
Mngmt of profiling
Interf.
Spec.
Integration
Architect
Integration
Architect
Sys S
Provider C
Provider C
Sys G

Creating a Synthetic Language

Why do we want it?

Integration Scenario

- **A German organization** maintains and requires information about **transportation structures** in Europe.
- **A Serbian organization** is willing to share information about its **transportation structures**.
- **The information systems of the two organizations** need to be integrated.
- In the future, **additional information systems of new organizations** will need to be integrated.

Usage of a Synthetic Language

System B
speaking German

Usage of a Synthetic Language

Frage: Wie Lang ist die U-Bahn in Staat X?

System B
speaking German

Staat	Deutschland
U-Bahn	300 KM
S-Bahn	1000 KM

Usage of a Synthetic Language

Frage: Wie Lang ist die U-Bahn in Serbien?

System B
speaking German

Staat	Deutschland
U-Bahn	300 KM
S-Bahn	1000 KM

Staat	Serbien
U-Bahn	? KM
S-Bahn	? KM

Usage of a Synthetic Language

Pitanje: Koliko je dug metro u Srbiji?

System A
speaking Serbian

Zemlja	Srbija
Metro	50 KM

Frage: Wie Lang ist die U-Bahn in Serbien?

System B
speaking German

Staat	Deutschland
U-Bahn	300 KM
S-Bahn	1000 KM

Staat	Serbien
U-Bahn	? KM
S-Bahn	? KM

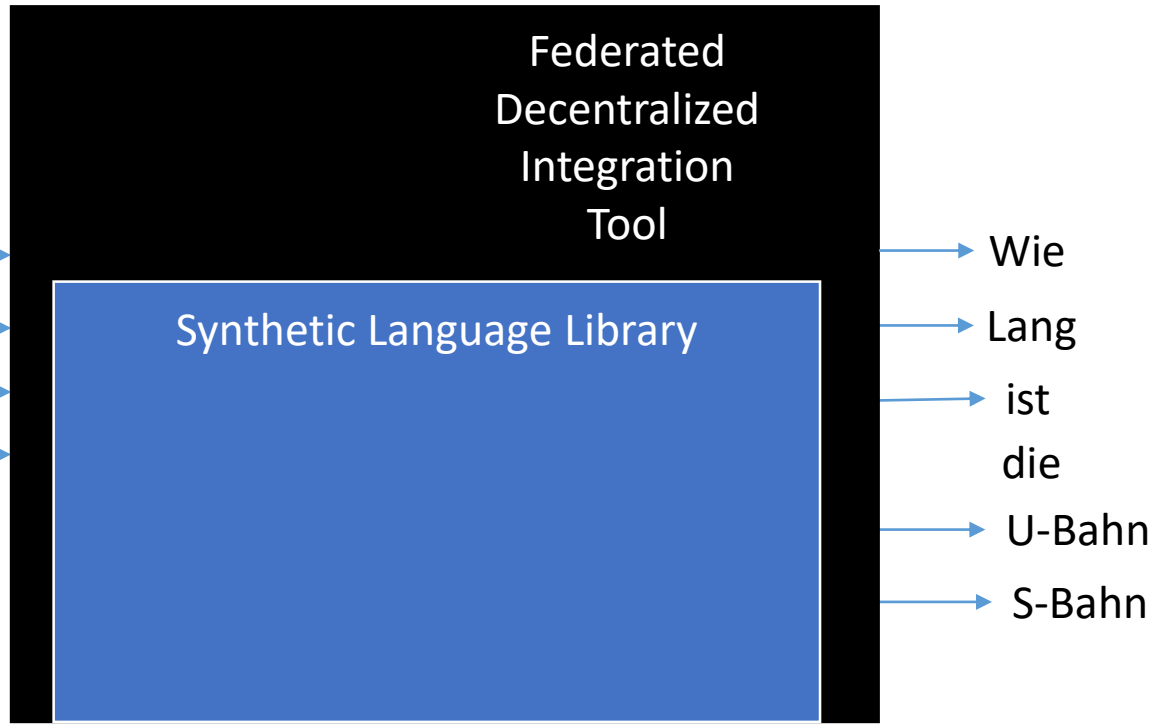
Usage of a Synthetic Language

Pitanje: Koliko je dug metro u Srbiji?

Frage: Wie Lang ist die U-Bahn in Serbien?

System A
speaking Serbian

Zemlja	Srbija
Metro	50 KM



System B
speaking German

Staat	Deutschland
U-Bahn	300 KM
S-Bahn	1000 KM

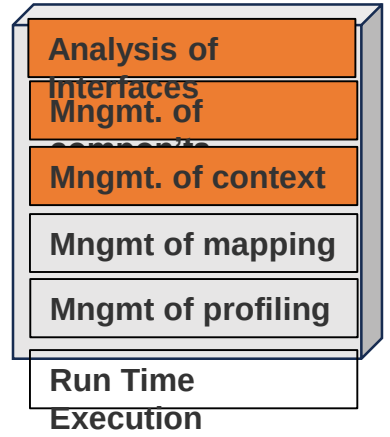
Staat	Serbien
U-Bahn	? KM
S-Bahn	? KM

Creating a Synthetic Language Library

What is Metro?

System from Serbia

Creating a Synthetic Language Library

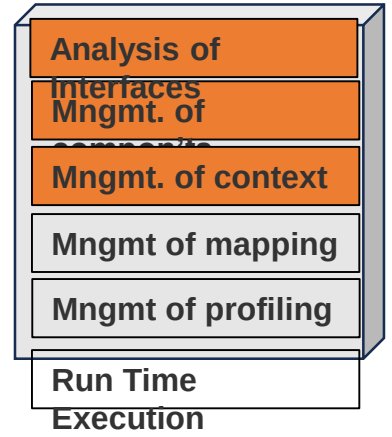


What is Metro?

System from Serbia

Location	Term-Label	Meaning	Format, Units	Synonyms (Location)
Serbia	Metro	A transportation method that goes underground.	Integer, KM	

Creating a Synthetic Language Library



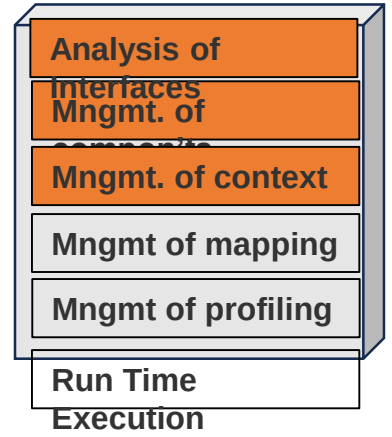
What is Metro?

System from Serbia

System from US

Location	Term-Label	Meaning	Format, Units	Synonyms (Location)
Serbia	Metro	A transportation method that goes underground.	Integer, KM	
US	Metro	A transportation method that can go both underground and on the ground.	Real, Mile	

Creating a Synthetic Language Library



What is Metro?

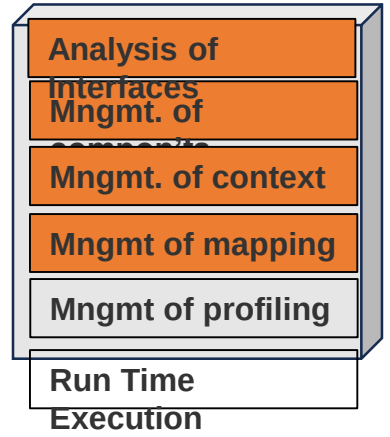
System from Serbia

System from US

System from Germany

Location	Term-Label	Meaning	Format, Units	Synonyms (Location)
Serbia	Metro	A transportation method that goes underground.	Integer, KM	
US	Metro	A transportation method that can go both underground and on the ground.	Real, Mile	
Germany	S-Bahn	A transportation method that can go both underground and on the ground.	Integer, KM	

Creating a Synthetic Language Library



What is Metro?

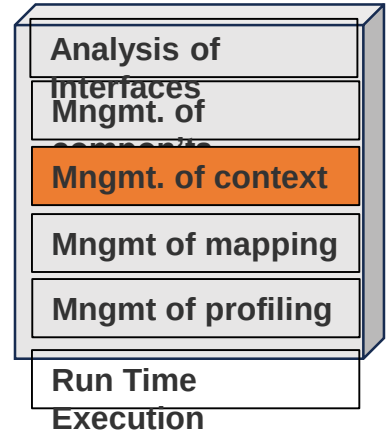
System from Serbia

System from US

System from Germany

Location	Term-Label	Meaning	Format, Units	Synonyms (Location)
Serbia	Metro	A transportation method that goes underground.	Integer, KM	U-Bahn (German)
US	Metro	A transportation method that can go both underground and on the ground.	Real, Mile	
Germany	S-Bahn	A transportation method that can go both underground and on the ground.	Integer, KM	

Creating a Synthetic Language Library



What is Metro?

System from Serbia

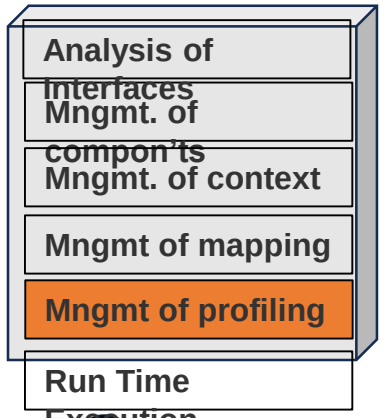
System from US

System from Germany

Location	Term-Label	Meaning	Format, Units	Synonyms (Location)
Serbia	Metro	A transportation method that goes underground.	Integer, KM	U-Bahn (German)
US	Metro	A transportation method that can go both underground and on the ground.	Real, Mile	
Germany	S-Bahn	A transportation method that can go both underground and on the ground.	Integer, KM	

Business Context

Creating a Synthetic Language Library



System A
speaking Serbian

Zemlja	Srbija
Metro	50 KM

Koliko
je
dug
metro

Immediate analysis of a new interface specification

Federated
Decentralized
Integration
Tool

Synthetic Language Library

Location	Term-Label	Synonyms
Serbia	Metro	U-Bahn [Germany]
US	Metro	
Germany	S-Bahn	

Immediate update of the Library with new standardized components… in a semantically meaningful way

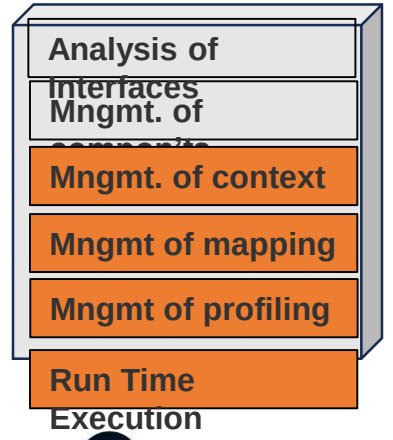
Wie
Lang
ist
die
U-Bahn
S-Bahn

System B
speaking German

Staat	Deutschland
U-Bahn	300 KM
S-Bahn	1000 KM

Staat	Serbien
U-Bahn	? KM
S-Bahn	? KM

Usage of Synthetic Language



System A
speaking Serbian

Zemlja	Serbia
Metro	50 KM

Koliko
je
dug
metro

Federated Decentralized Integration Tool

Data Elt	
Loc	Serbia
Term	Metro
Syn	U Bahn

Mapping	
Loc-1	Serbia
Loc-2	Germ.
Spec	<spec>

Data Elt	
Loc	German
Ter m	Metro
Syn	U-Bahn

Synthetic Language Library

Wie
Lang
ist
die
U-Bahn
S-Bahn

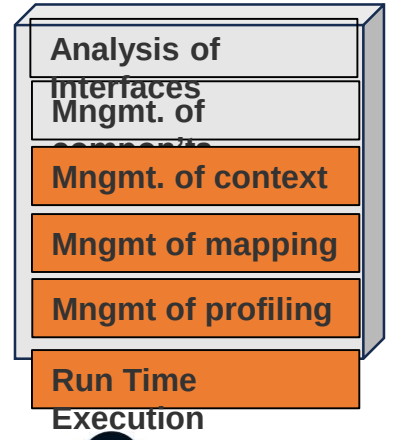
System B
speaking German

Staat	Deutsch.
U-Bahn	300 KM
S-Bahn	1000 KM

Staat	Serbia
U-Bahn	? KM
S-Bahn	? KM

Standardized mapping specification, indexed on the Business Context

Usage of Synthetic Language



System C
speaking English

State	MD
Metro	70 mile

How
long
is
metro

Federated
Decentralized
Integration
Tool

Data Elt	
Loc	US
Term	Metro
Syn	

Mapping	
Loc-1	US
Loc-2	Germa
Spec	<spec>

Data Elt	
Loc	German
Term	Metro
Syn	U-Bahn
Term	S-Bahn

Synthetic Language Library

Wie
Lang
ist
die
U-Bahn
S-Bahn

System B
speaking German

Staat	Deutsch.
U-Bahn	300 KM
S-Bahn	1000 KM

Staat	MD, US
U-Bahn	? KM
S-Bahn	? KM

Precise and reusable integration specification, enabling repeatable integration outcomes, given the Business Context

Demo

Core Component (Technical) Specification (CCTS)[1] on a Slide

- Core Components (CCs)
  - Library building blocks
  - Conceptual Components (Business Context-independent)
- Business Information Entities (BIEs)
  - Library usage specification (profiles)
  - BIE = CC (Library building blocks) + BC (Business Context) + formatting constraints
  - Business Component
- Business Context
  - Definition and codification of the use case(s) in which BIE is valid
  - Enables **increase of reusability and automation** by providing a mechanism to apply BIEs and mapping specs (i.e., translations) for other systems that have the **same or similar business context**

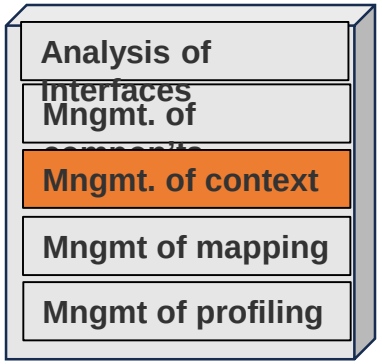
[1] ISO 15000-5:2014-based and extended

Business Context encodes integration scenario

- Describes System operating environment
- Defined using different aspects (i.e., categories):
  - Application (e.g., ERP that a system is using)
  - Geo-political location
  - Business process activity
- Example: System A is using SAP for PL management, it is located in Germany

Business Context encodes integration scenario

- Describes System operating environment



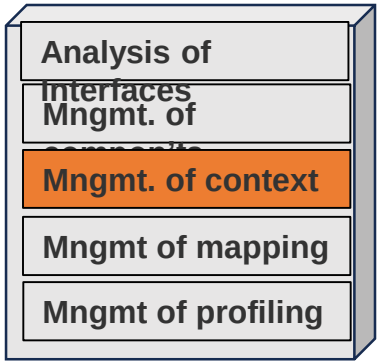
- Defined using different aspects (i.e., categories):
  - Application (e.g., ERP that a system is using)
  - Geo-political location
  - Business process activity

- Example: System A is using **SAP** for PL management, it is located in Germany

Application

Business Context encodes integration scenario

- Describes System operating environment



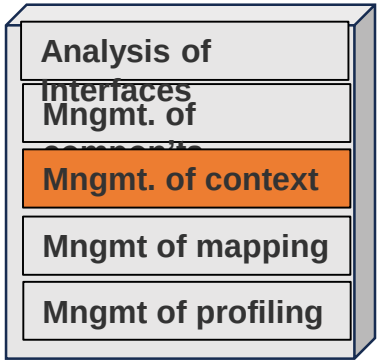
- Defined using different aspects (i.e., categories):
  - Application (e.g., ERP that a system is using)
  - Geo-political location
  - Business process activity

- Example: System A is using SAP for **PL management**, it is located in Germany

Business process activity

Business Context encodes integration scenario

- Describes System operating environment



- Defined using different aspects (i.e., categories):
  - Application (e.g., ERP that a system is using)
  - Geo-political location
  - Business process activity

- Example: System A is using SAP for PL management, it is located in **Germany**

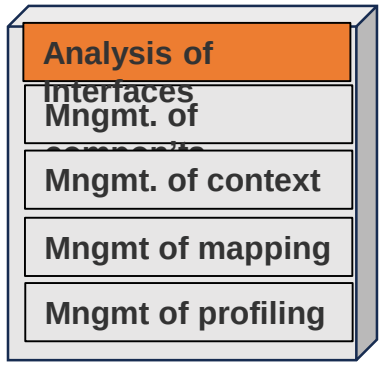
Geo-political location

PL interface spec examples for demo

Product	Price	with tax
Ameda Adapter Cap	$1.00	$1.09
Ameda Comfortgel Hydrogel Pads (1 pair)	$13.99	$15.18
Ameda Comfortgel Hydrogel Pads (2 pair)	$27.95	$30.33
Ameda Diaphragm	$2.10	$2.28
Ameda Flanges	$8.30	$9.01
Ameda Locking Disc	$0.25	$0.27
Ameda Piston Seal	$4.00	$4.34
Ameda Piston Unit	$4.00	$4.34
Ameda Silicone Tubing	$4.40	$4.77
Ameda Tubing adapter	$1.25	$1.36
Ameda White Valve	$2.10	$2.28
Dual Hygienikit	$52.00	$56.42
Dual Hygienikit Disposable	$25.00	$27.13
My Brest Friend Deluxe Pillow	$49.00	$53.17
My Brest Friend Pillow	$39.00	$42.32
Simple Wishes Hands Free Breast Bump Bra (XS-XXL)	$35.00	$37.98
Gabrialla Maternity Support Belt (Medium Support)	$31.00	$33.64
Gabrialla Maternity Support Belt (Strong Support) Large	$34.00	$36.89
Lansinoh Baby Wipes pkg. 80	$12.95	$14.05
Easy Expression Bustier or Halter (sizes S to XL)	$33.00	$35.81
All Halo SleepSack Swaddles (cotton or fleece)	$19.00	$20.62

9/16/2011 V:\whrc\gex\WHRC Product Price List


```
"id": "PriceList",
"title": "PriceList",
"type": "object",
"properties": {
  "PriceList": {
    "id": "PriceList",
    "type": "object",
    "description": "List of products' prices",
    "properties": {
      "ItemLine": {
        "id": "Item",
        "type": "array",
        "minItems": 1,
        "maxItems": 20,
        "description": "PL item lines",
        "items": {
          "id": "itemLine",
          "type": "object",
          "description": "PL item lines",
          "properties": {
            "product": {
              "id": "product",
              "type": "string",
              "minItems": 1,
              "maxItems": 1,
              "maxLength": 21,
              "description": "Product name."
            },
            "price": {
              "id": "price",
              "minItems": 1,
              "maxItems": 1,
              "type": "integer",
              "description": "Price of a product without tax."
            },
            "priceWithTax": {
              "id": "priceWithTax",
              "minItems": 1,
              "maxItems": 1,
              "type": "integer",
              "description": "Price of a product with taxes included."
```

PL interface spec examples for demo

Price List (Luggage & Bags 2) 23-abr-2016

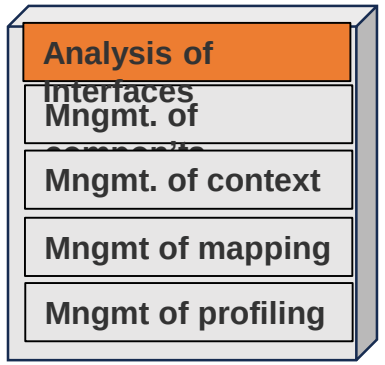
Demo
WWW: http://www.company.com
E-mail: mail@company.com
Phone: 206-984-3919
P.O. Box 34069 #381 Seattle, WA 98124-1069

SKU	Description	Price
Women's Bags		
WB001	AMELIEGALANTI 2016 new casual women shoulder bags famous brand	12,00
WB002	SheIn Bags Handbags Women Famous Brands Ladies Fashion	16,00
WB003	2016 New fashion shoulder bags handbags women famous brand	17,00
WB004	Fashion Small Bag Women Messenger Bags Soft PU Leather Handbags	22,00
WB005	Famous Brand Luxury Women Leather Handbags Women's Trunk	55,66
WB006	Realer brand women bag hollow out ombre handbag floral	22,00
WB007	New Arrival Women Fashion Faux Leather Satchel Bowknot	12,00
WB008	2016 New Fashion Women PU Leather Handbag High Quality	34,00
Women's Bags 4		
WB009	Ladsoul 2016 women handbag pu leather women shoulder	56,00
WB0010	Famous Brand Ladies Hand Bags Women PU Leather Bag Brown	54,00
WB0011	2016 New fashion women bag vintage handbags crossbody	67,00
WB0012	New Brand Bags For Women Leather Women Messenger	54,00
WB0013	INLEELA 2016 Fashion Scrub Women Bucket Bag Vintage	32,00
WB0014	Women Shoulder Bag Candy 10 Colors Fashion Brand	44,00

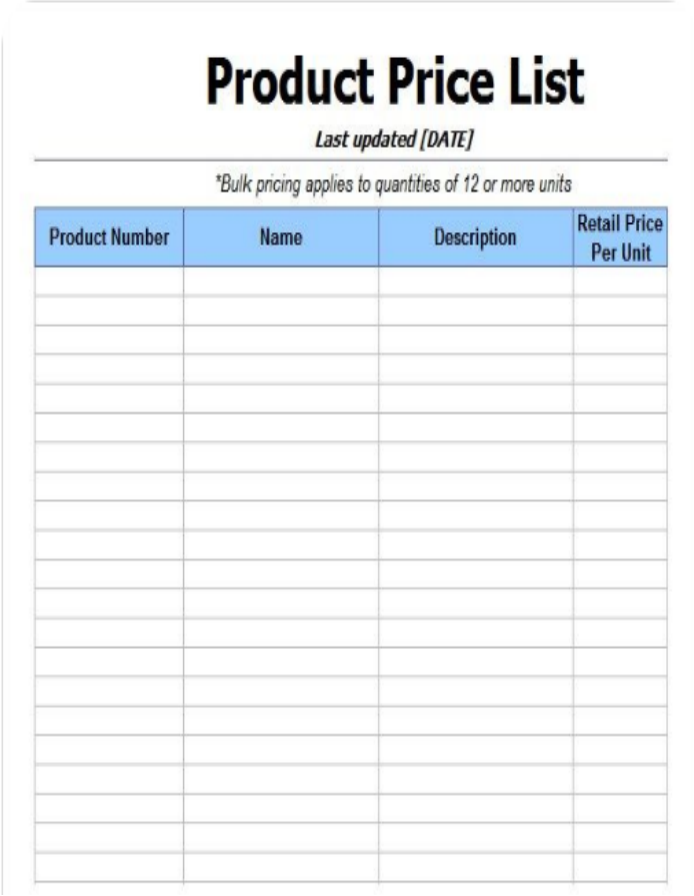
SKU	Description	Price
WB0015	Hot selling! Women Fashion Small Shell Leather Plaid	56,00
WB0016	Fashion 2016 Designers Women Messenger Bags Females	78,00
Women's Bags 3		
WB0018	2016 new woman handbag famous brands shoulder bag Ladies	66,00
WB0019	FLYING BIRDS! women leather handbag messenger bags shoulder	54,00
WB0020	Bolsa Bolsos Carteras Mujer Marca Women PU Leather Cat	34,00
WB0021	2016 NEW Fashion Famous Brand PU Leather Woven Shoulder	52,00
WB0022	All-Match Fashion Female Package 2015 Winter Elegant Women	61,00
WB0023	New Fashion Alligator Lady Embossing Messenger Crocodile	23,00
WB0024	2016 Women Messenger Bag Hollow Out bolsa feminina bolso	56,00
WB0025	2016 New Luxury Women Leather Handbags Rivet Woman	77,00
WB0026	2016 new Brand Monkey kiple Nylon Women's Messenger	93,00
WB0027	2016 Vintage Women bag Lady PU Leather Cross Body	49,00
WB0028	ESUFEIR 2016 Fashion Panelled Leather Women Handbag Multicolor	46,00
WB0029	New arrival fashion women messenger bags shoulder bags	29,00
WB0030	2016 New Women Tote Bag Luxury Brand Bags Handbags Woman	73,00
WB0031	Designer Serpentine Women's Handbag Shoulder Bag Quality	66,00

Demo Page 1/4


```
"properties": {
  "itemLine": {
    "id": "Item",
    "type": "array",
    "minItems": 1,
    "maxItems": 20,
    "description": "PL item lines",
    "items": {
      "id": "itemLine",
      "type": "object",
      "description": "PL item lines",
      "properties": {
        "sku": {
          "id": "SKU",
          "type": "string",
          "minItems": 1,
          "maxItems": 1,
          "maxLength": 21,
          "description": "Stock keeping unit."
        },
        "price": {
          "id": "price",
          "minItems": 1,
          "maxItems": 1,
          "type": "integer",
          "description": "Price of a product without tax."
        },
        "description": {
          "id": "description",
          "minItems": 1,
          "maxItems": 1,
          "type": "string",
          "description": "Description of a product."
        },
        "category": {
          "id": "category",
          "minItems": 1,
          "maxItems": 1,
          "type": "string",
          "description": "Category of a product."
        }
```

PL interface spec examples for demo

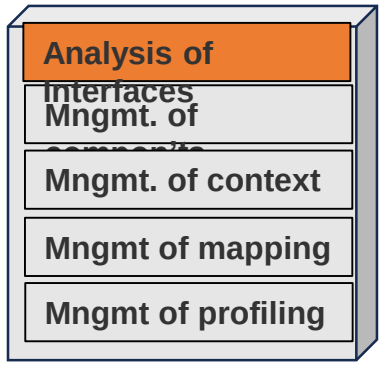


Product Price List

Last updated [DATE]

*Bulk pricing applies to quantities of 12 or more units

Product Number	Name	Description	Retail Price Per Unit



```
"ItemLine": {
  "id": "Item",
  "type": "array",
  "minItems": 1,
  "maxItems": 20,
  "description": "PL item lines",
  "items": {
    "id": "itemLine",
    "type": "object",
    "description": "PL item lines",
    "properties": {
      "productNumber": {
        "id": "productNumber",
        "type": "string",
        "minItems": 1,
        "maxItems": 1,
        "maxLength": 21,
        "description": "Product number identification."
      },
      "name": {
        "id": "name",
        "type": "string",
        "minItems": 1,
        "maxItems": 1,
        "maxLength": 21,
        "description": "Product name."
      },
      "description": {
        "id": "description",
        "minItems": 1,
        "maxItems": 1,
        "type": "string",
        "description": "Description of a product."
      },
      "retailPricePerUnit": {
        "id": "retailPricePerUnit",
        "minItems": 1,
        "maxItems": 1,
        "type": "integer",
        "description": "Price of a product with taxes included."
      }
```

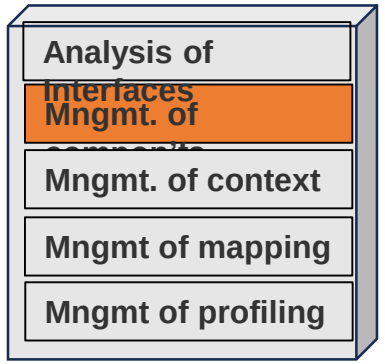
Results

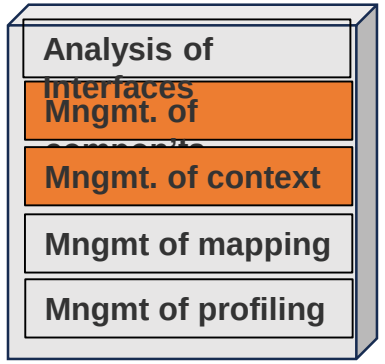
- Core Components (integral data model)

Object_class_term	Property_term	Representation_term	Definition
Item	category	Text. Type	Category of a product.
Item	description	Text. Type	Description of a product.
Item	price	Number. Type	Price of a product without tax.
Item	priceWithTax	Number. Type	Price of a product with taxes included.
Item	product	Text. Type	Product name.
Item	productNumber	Text. Type	Product number identification.
Item	SKU	Text. Type	Stock keeping unit.

- Business Information Entities (profiles)

DEN	Definition	min_cardinality	max_cardinality	BDT_id	Constraint_De	Constrain	Assigned_BCs
Item. category	Category of a product.	1	1	14	NULL	NULL	33
Item. description	Description of a product.	1	1	14	NULL	NULL	33, 55
Item. price	Price of a product without tax.	1	1	17	NULL	NULL	1, 33
Item. priceWithTax	Price of a product with taxes incl...	1	1	17	NULL	NULL	1, 55
Item. product	Product name.	1	1	14	NULL	NULL	1, 55
Item. productNumber	Product number identification.	1	1	14	NULL	NULL	55
Item. SKU	Stock keeping unit.	1	1	14	NULL	NULL	33



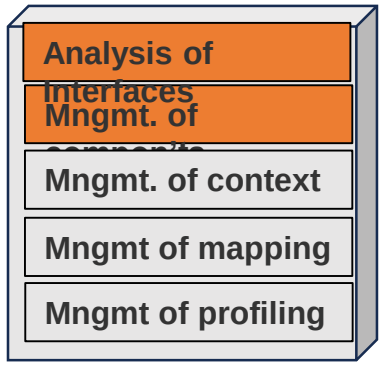


[1] May be based on interface specification and/or an existing standard specification that uses CCTS

Results

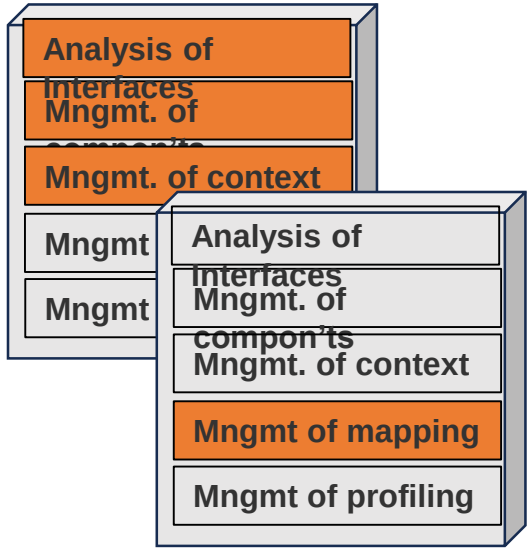
- Core Components (integral data model)

Object_class_term	Property_term	Representation_term	Definition
Item	category	Text. Type	Category of a product.
Item	description	Text. Type	Description of a product.
Item	price	Number. Type	Price of a product without tax.
Item	priceWithTax	Number. Type	Price of a product with taxes included.
Item	product	Text. Type	Product name.
Item	productNumber	Text. Type	Product number identification.
Item	SKU	Text. Type	Stock keeping unit.



- Business Information Entities (profiles)

DEN	Definition	min_cardinality	max_cardinality	BDT_id	Constraint_De	Constrain	Assigned_BCs
Item. category	Category of a product.	1	1	14	NULL	NULL	33
Item. description	Description of a product.	1	1	14	NULL	NULL	33, 55
Item. price	Price of a product without tax.	1	1	17	NULL	NULL	1, 33
Item. priceWithTax	Price of a product with taxes incl...	1	1	17	NULL	NULL	1, 55
Item. product	Product name.	1	1	14	NULL	NULL	1, 55
Item. productNumber	Product number identification.	1	1	14	NULL	NULL	55
Item. SKU	Stock keeping unit.	1	1	14	NULL	NULL	33



DEN	definition	BDT_id	Business_Terms_For_BCs	Overall_BCs
category	Category of a product.	14	NULL	33
description	Description of a product.	14	NULL	33, 55
price	Price of a product without tax.	17	NULL	1, 33
priceWithTax	Price of a product with taxes included.	17	retailPricePerUnit - 55	1, 55
product	Product name.	14	name - 55	1, 55
productNumber	Product number identification.	14	NULL	55
SKU	Stock keeping unit.	14	NULL	33

Integration demo

- Source (business context = 55)
  BC 55 =SAP, Price List Management, Germany

Product Price List

Last updated [DATE]

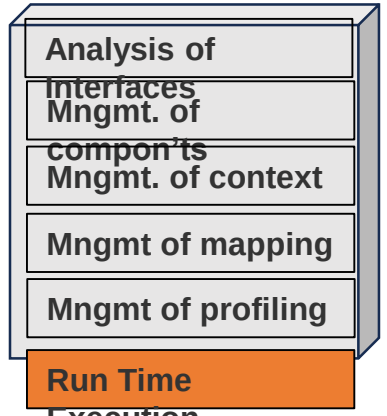
*Bulk pricing applies to quantities of 12 or more units

Product Number	Name	Description	Retail Price Per Unit

- Target (business context = 1)
  BC 1 =Oracle, Price List Management, Serbia

Product	Price	with tax
Ameda Adapter Cap	$1.00	$1.09
Ameda Comfortgel Hydrogel Pads (1 pair)	$13.99	$15.18
Ameda Comfortgel Hydrogel Pads (2 pair)	$27.95	$30.33
Ameda Diaphragm	$2.10	$2.28
Ameda Flanges	$8.30	$9.01
Ameda Locking Disc	$0.25	$0.27
Ameda Piston Seal	$4.00	$4.34
Ameda Piston Unit	$4.00	$4.34
Ameda Silicone Tubing	$4.40	$4.77
Ameda Tubing adapter	$1.25	$1.36
Ameda White Valve	$2.10	$2.28
Dual Hygienikit	$52.00	$56.42
Dual Hygienikit Disposable	$25.00	$27.13
My Brest Friend Deluxe Pillow	$49.00	$53.17
My Brest Friend Pillow	$39.00	$42.32
Simple Wishes Hands Free Breast Bump Bra (XS-XXL)	$35.00	$37.98
Gabrialla Maternity Support Belt (Medium Support)	$31.00	$33.64
Gabrialla Maternity Support Belt (Strong Support) Large	$34.00	$36.89
Lansinoh Baby Wipes pkg. 80	$12.95	$14.05
Easy Expression Bustier or Halter (sizes S to XL)	$33.00	$35.81
All Halo SleepSack Swaddles (cotton or fleece)	$19.00	$20.62

9/16/2011 V:\whrc\gex\WHRC Product Price List



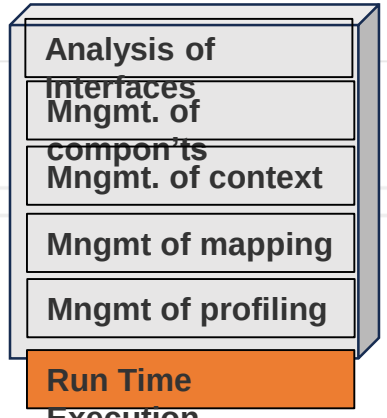
Integration demo

POST http://localhost:8080/profiling/dataExchange Send

Params Authorization Headers (11) Body Pre-request Script Tests Settings Cookies

none form-data x-www-form-urlencoded raw binary GraphQL JSON Beautify

```
{
    "sourceBusinessContext": {
        "businessContextId": "55"
    },
    "targetBusinessContext": {
        "businessContextId": "1"
    },
    "jsonDocumentLocation": "C:\\Users\\enj2\\OneDrive - NIST\\Prototype plan\\Prototype presentation\\For RubiWorks\\PL1 sample data - source.json"
}
```



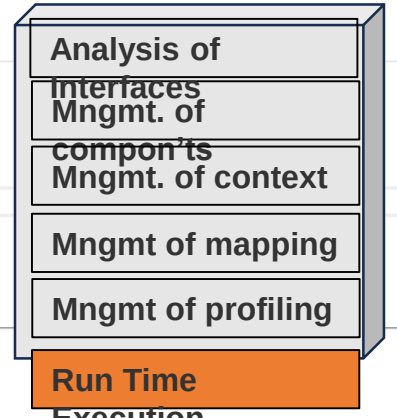
Integration demo

POST http://localhost:8080/profiling/dataExchange Send

Params Authorization Headers (11) Body Pre-request Script Tests Settings Cookies

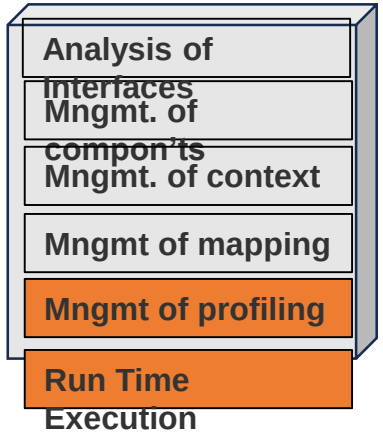
none form-data x-www-form-urlencoded raw binary GraphQL JSON Beautify

```
{
    "sourceBusinessContext": {
        "businessContextId": "55"
    },
    "targetBusinessContext": {
        "businessContextId": "1"
    },
    "jsonDocumentLocation": "C:\\Users\\enj2\\OneDrive - NIST\\Prototype plan\\Prototype presentation\\For RubiWorks\\PL1 sample data - source.json"
}
```




```
{
    "PriceList": {
        "ItemLine": [
            {
                "productNumber": "123",
                "name": "Ameda Adapter Cap",
                "description": "Ameda Adapter Cap product description",
                "retailPricePerUnit":"1.09"
            },
            {
                "productNumber": "223",
                "name": "Ameda Flanges",
                "description": "Ameda Flanges product description",
                "retailPricePerUnit":"9.01"
            }
        ]
    }
}
```

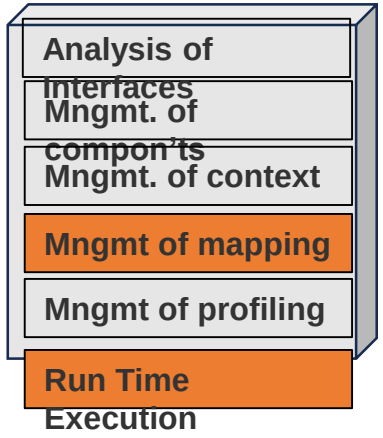
Integration demo – background process



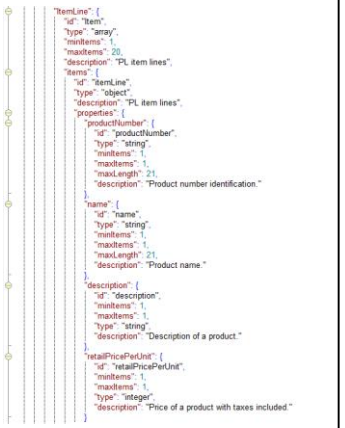
1. Find the PL profile for the source BC


```
"ItemLine": {
  "id": "Item",
  "type": "array",
  "minItems": 1,
  "maxItems": 20,
  "description": "PL item lines",
  "items": {
    "id": "itemLine",
    "type": "object",
    "description": "PL item lines",
    "properties": {
      "productNumber": {
        "id": "productNumber",
        "type": "string",
        "minItems": 1,
        "maxItems": 1,
        "maxLength": 21,
        "description": "Product number identification."
      },
      "name": {
        "id": "name",
        "type": "string",
        "minItems": 1,
        "maxItems": 1,
        "maxLength": 21,
        "description": "Product name."
      },
      "description": {
        "id": "description",
        "minItems": 1,
        "maxItems": 1,
        "type": "string",
        "description": "Description of a product."
      },
      "retailPricePerUnit": {
        "id": "retailPricePerUnit",
        "minItems": 1,
        "maxItems": 1,
        "type": "integer",
        "description": "Price of a product with taxes included."
      }
```

Integration demo – background process



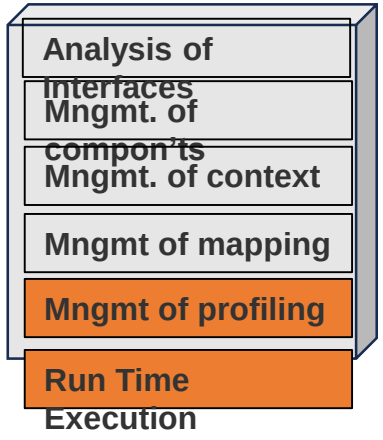
1. Find the PL profile for the source BC



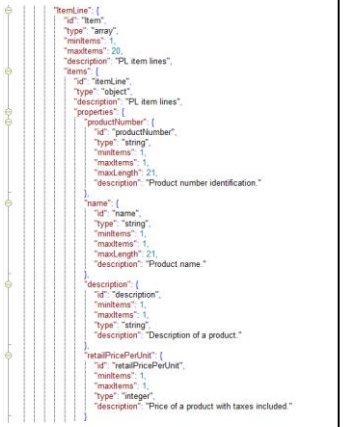
2. PL profile -> standard component mapping (implicit)

DEN	definition	BDT_id	Business_Terms_For_BCs
category	Category of a product.	14	NULL
description	Description of a product.	14	NULL
price	Price of a product without tax.	17	NULL
priceWithTax	Price of a product with taxes included.	17	retailPricePerUnit - 55
product	Product name.	14	name - 55
productNumber	Product number identification.	14	NULL
SKU	Stock keeping unit.	14	NULL

Integration demo – background process



1. Find the PL profile for the source BC



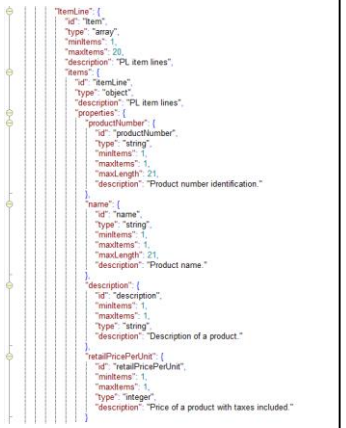
2. PL profile -> standard component mapping (implicit)

DEN	definition	BDT_id	Business_Terms_For_BCs
category	Category of a product.	14	NULL
description	Description of a product.	14	NULL
price	Price of a product without tax.	17	NULL
priceWithTax	Price of a product with taxes included.	17	retailPricePerUnit - 55
product	Product name.	14	name - 55
productNumber	Product number identification.	14	NULL
SKU	Stock keeping unit.	14	NULL

3. Find the PL profile for the target BC

Integration demo – the background process

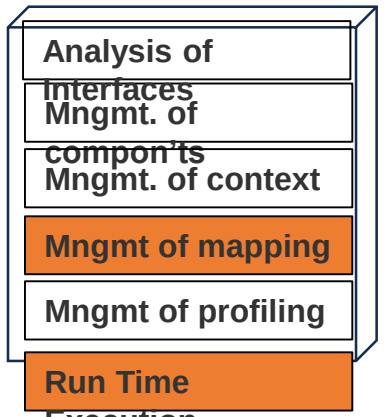
1. Find the PL profile for the source BC



2. PL profile -> standard component mapping (implicit)

DEN	definition	BDT_id	Business_Terms_For_BCs
category	Category of a product.	14	NULL
description	Description of a product.	14	NULL
price	Price of a product without tax.	17	NULL
priceWithTax	Price of a product with taxes included.	17	retailPricePerUnit - 55
product	Product name.	14	name - 55
productNumber	Product number identification.	14	NULL
SKU	Stock keeping unit.	14	NULL

3. Find the PL profile for the target BC

4. Find the mapping specs

```
{
    "ItemLine": [
        "MappingMaxCardinality -> copy the data",
        "MappingMinCardinality -> copy the data"
    ],
    "retailPricePerUnit": [
        "MappingMaxCardinality -> copy the data",
        "MappingMinCardinality -> copy the data",
        "MappingTerms -> priceWithTax -> retailPricePerUnit"
    ],
    "name": [
        "MappingMaxCardinality -> copy the data",
        "MappingMinCardinality -> copy the data",
        "MappingTerms -> product -> name"
    ],
    "description": [],
    "productNumber": []
}
```