ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
ΠΑΝΕΠΙΣΤΗΜΙΟ ΚΡΗΤΗΣ

Εισαγωγή στα Δίκτυα Υπηρεσιών

Διάλεξη 8η: Assisting Lecture 4 - RosettaNet standard

Μύρων Παπαδάκης

Τμήμα Επιστήμης Υπολογιστών

Introduction to Service Networks
CS-592 – Spring 2015

Assisting Lecture 6 - RosettaNet

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Introduction

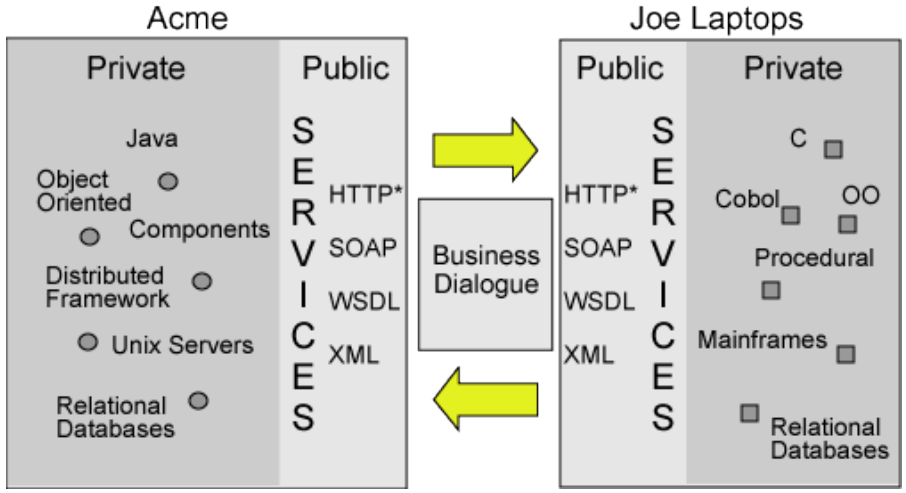
- The process of taking a product from design to sale often requires that a company secures the cooperation of outside entities.

- The entities that are part of this network of product development and distribution comprise what is known as a "**supply chain**".

- **Supply chain: consists of all parties involved (directly or indirectly) in fulfilling a customer request:**
  - Entities: suppliers, manufacturer, transporters, warehouses, retailers, customers
  - Functions: product development, marketing, operations, distributions, finance, customer service

Web Services

- An organization provides access to its services through a **public interface based on open standards and a common language.**
  - separation between the public and private sides of the Web service removes technology concerns like OS, programming language, and platforms from the e-business dialogue
  - enables business partners with completely different technology setups to communicate with each other



The public and private side of Web services

E-Business Dialogue (1/2)

- The basis for a successful real-world Web service is the ability for business partners to conduct electronic business dialogues.

- In e-business the dialogue is digital, and the **software systems at both ends must make sense of the dialogue**.

  - A software system can really only "understand" what it has been programmed to understand

  - The cost to conduct e-business dialogue can become prohibitively expensive if you have to program several interpretations of dialogues for the same business activity…

E-Business Dialogue (2/2)

- For example, suppose you have 22 business partners with whom you buy and sell goods

- If each of these partners defines **a different dialogue** for conducting purchase orders, you will have to implement 22 dialogues to do the same thing!
  - This is why standard ways of describing, accessing, and processing business activities and electronic business dialogue becomes crucial.

- **So, what is an e-business dialogue**?
  - An e-business dialogue is the conversation that takes place between the software systems of business partners in order to conduct a business activity.
  - The dialogue can be simple or elaborate based on the business activity that needs to be executed.

E-Business Dialogues Components

- For “Acme” and “Joe Laptops” to start a business dialogue, both organizations need to have **public interfaces** that are defined in a standard manner, and accessible via Internet based protocols
  - Removing technology hurdles from the dialogue is the 1st step for conducting e-business dialogues
  - The 2nd step is to use standardized dialogues, messages, and vocabulary

The components of an e-business dialogue

E-Business Standards

- **Why are global e-business standards necessary?**
  - Companies that use propriety connections and with only a small number of trading partners are at a significant disadvantage in today's highly competitive yet collaborative business environment.
  - The Internet offers a way for standard business processes to be exchanged, not just with a small number of intimate trading partners, but with a potentially unlimited global trading community.

- **A good e-business dialogue must have the following features:**
  - Open and accessible public **interfaces**
  - Partner **roles** (i.e buyer and seller)
  - Standard **messages** exchanged in agreed upon choreography
  - Standard **vocabulary** (any words in the messages should have the same meaning)
  - An environment of **security** and **trust** (treat each exchanged message as a contract).

What is RosettaNet? (1/2)

- RosettaNet is a non-profit consortium of major information technology, electronic component, and semiconductor manufacturing companies
- The RosettaNet consortium includes IT companies like IBM, Microsoft, EDS, Netscape, Oracle, SAP, Cisco systems, Compaq and Intel.
- **Aims at establishing standard processes for the sharing of business information (B2B).**
- RosettaNet defines standards for B2B communication and business processes
  - B2B process standards specify how a business-process workflow and collaboration is managed across two or more companies, commonly referred to as **trading partners** (TPs).

What is RosettaNet? (2/2)

- Definition of standards and services to support business transactions among partners within the global supply chain (mainly focused).
- Vision: to become a global standardization and supply chain service
- RosettaNet standards and services establish a **common language** for business transactions.
  - The standards create a foundation for integrating critical processes among partners within a global supply chain or **trading network**.
- RosettaNet is basically a B2B (business to business) communication protocol providing:
  - An easy and efficient way of conducting e-business.
  - A common language for interaction of business processes.
  - A set of standards for global supply chain.

Why bother with RosettaNet?

- To create a real-world Web service, we need to create the **ability to conduct an e-business dialogue**.
- To create a useful e-business dialogue, along with open and accessible public interfaces, we need to use **standardized messages, vocabulary and choreography.**
- Essentially, we need to take a standard e-business process and enable it in the Web services environment.
- RosettaNet is an industry leader for e-business process specifications and therefore a natural choice to choose our “standard" e-business process for our e-business dialogue.
- **In RosettaNet, the e-business dialogues are defined with UML activity diagrams, text tables, and XML documents**

RosettaNet in the Supply Chain

- RosettaNet aims at standardizing
  - **product descriptions** and
  - business processes in information technology supply chain operations.

- RosettaNet's supply chain includes information **technology products** (e.g. boards, systems, peripherals, finished systems) and electronic components (e.g. chips, connectors)

- A **conversation** in the supply chain consists of
  - **a set of business documents** (e.g. purchase order, purchase order acknowledgment)
  - **message exchange logic** (e.g. the sequencing of the actions that take place during a product quote request).

RosettaNet Standards

- The RosettaNet e-business process standards aim to facilitate speed, efficiency and reliability to enable greater collaboration and communication between trading partners.

- Provides a common platform of communication, or a common language, that allows the different trading partners which are involved in a business process to **automate that process and to conduct it over the Internet.**

- **Public processes are defined according to RosettaNet standards in order to eliminate the cost of defining different processes for each partner** .

The RosettaNet standard

- The RosettaNet standard is based on XML
  - defines message guidelines
  - interfaces for business processes
  - implementation frameworks for interactions between companies.

- Mostly addressed is the **supply chain area**, but also manufacturing, product and material data and service processes are in scope.

- The standard is widely spread in the global semiconductor industry, but also in electronic components, consumer electronics, telecommunication and logistics.

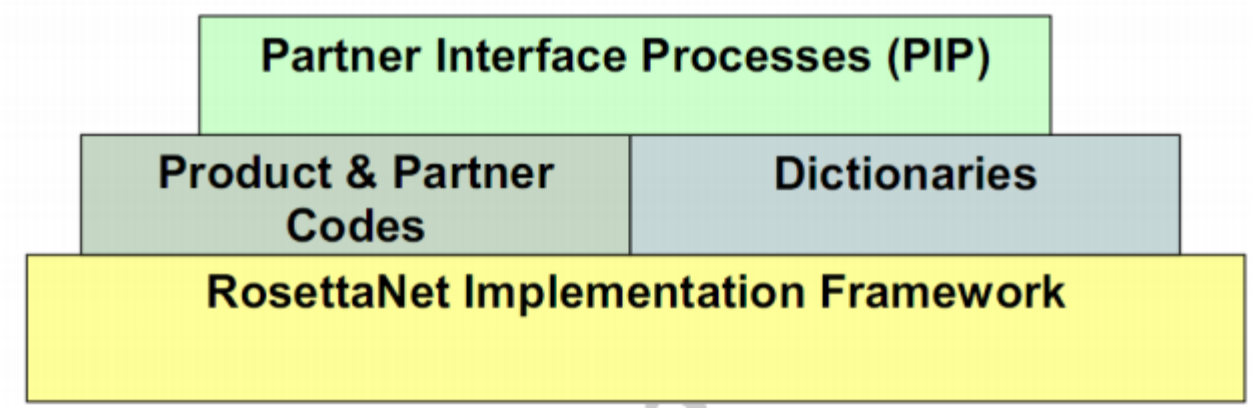
- RosettaNet has already spent several years creating and **implementing automated e-business dialogues** between partners.

RosettaNet Standard Overview

1. **Dictionaries:** Data Format

2. **Partner Interface Processes (PIPs):** Business Processes

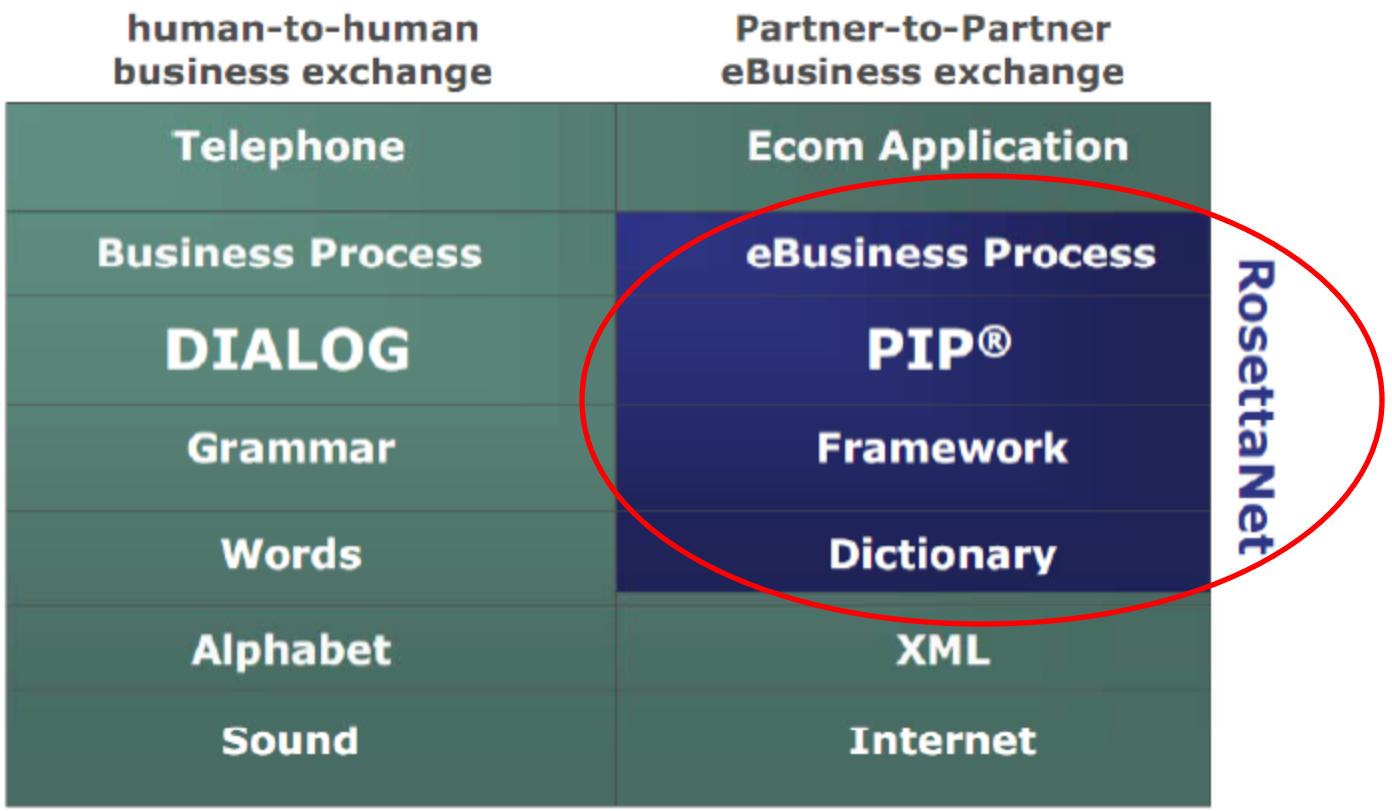
3. **RosettaNet Implementation Framework (RNIF):** Messaging



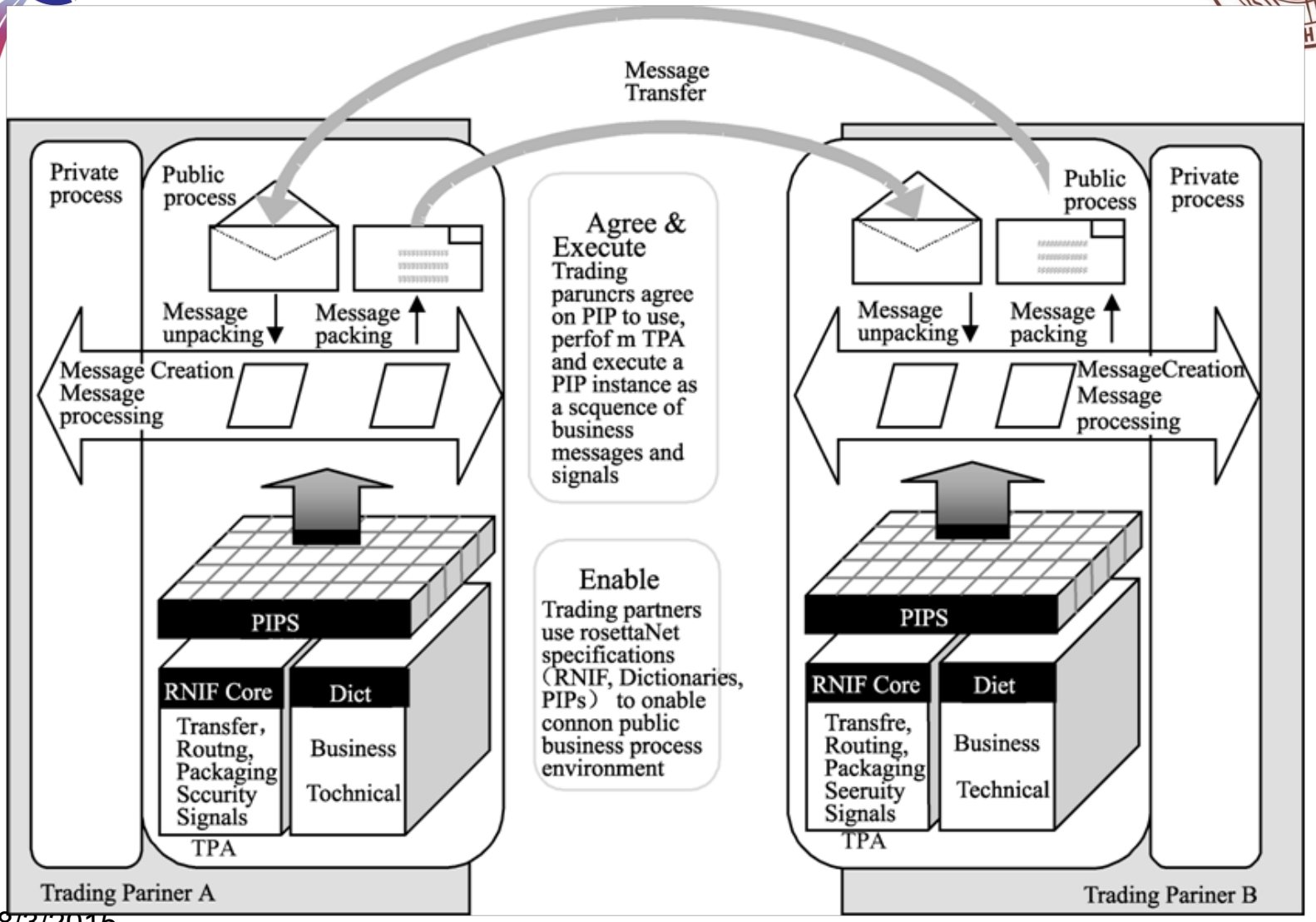
RosettaNet Standards

- The standards of RosettaNet to automate B2B interactions cover the following core areas:
  - **Dictionaries – Data Format**
    - standardize the **words** used in the messages (vocabulary)
  - **Partner Interface Processes (PIPs) – Business Processes**
    - Specify the **business process** governing the interchange of the business messages themselves
    - business processes as XML-based business documents and messaging choreography
  - **RosettaNet Implementation Framework (RNIF) - Messaging**
    - defines the way in which business processes are wrapped and transported
    - contains specifications to enable trust and security in the message exchange

E-Business Exchange



How RosettaNet works



The collaboration of RosettaNet components

Doing Business Through RosettaNet

- How different partner types in supply chains do business today? Defined as an electronic business document dialog.

- **First, the supply chain partners come together** and analyze their common inter-company business scenarios (i.e. public processes)
  - how they interact to do business with each other
  - which documents they exchange and in what sequence

- Then they **re-engineer these processes to define the electronic processes to be implemented** within the scope of the RosettaNet Framework

- An **electronic business process** includes both the **interactions** between partner companies, and the **private processes** within the company

- RosettaNet provides guidelines only for PIPs which are the public part of the inter-company processes

RosettaNet > Dictionaries (1/3)

- **The Problem**: one of the core problems faced by B2B integration efforts in the past was dealing with the uniquely defined terminology (dictionary) that each company used in its procurement processes.
  - This inevitably created a lot of confusion among the trading partners.

- With the RosettaNet technical dictionary, these companies will now be able to use a common platform to conduct business processes.

- **RosettaNet defines a common terminology (vocabulary) for e-business communication**.
  - Defines the language used in business transactions

RosettaNet > Dictionaries (2/3)

- RosettaNet dictionaries reduce confusion in the procurement process due to each company's uniquely defined terminology (dictionary of terms)
  - For example, when introducing a new product, information describing that product will only have to be entered once by the manufacturer and will then appear consistently throughout distributor and reseller catalogs.

- For example, there are as many 900 words to describe all the properties of a personal computer, everything from modems and monitors down to the amount of RAM

- **Two RosettaNet dictionaries** outline the **technical** and **business** terms that a partner should use in RosettaNet transactions

RosettaNet > Dictionaries (3/3)

- The **RosettaNet Technical Dictionary is an XML document** that contains names and descriptions of technology products, electronic components.
  - helps standardize the language e.g. on an order request form
  - provides properties for defining products (e.g. computer parts) and services (e.g. purchase order) in XML DTD
  - designed to support unambiguous and automated electronic exchange of production information
    - achieved by standardizing the semantics used to describe product characteristics and information

- The **RosettaNet Business Dictionary** defines standard titles and field names for company documents such as invoices and product information sheets
  - contains a vocabulary that can be used to describe business properties (e.g. business name, business address, tax identifier).

RosettaNet > Dictionaries > RNTD > GTIN

- In RosettaNet, **PIPs use Global Trade Item Number (GTIN) to identify products (used as the basis in barcodes)**
- **In this way proprietary manufacturer and customer product numbers are avoided**
- In RosettaNet, by using the standard tags through “PIP2A5/EC Query Technicaproduct information details can be obtained by **querying** a supply chain partner's catalog l Information” to return one or more GTINs along with product data
- Hence RTD is used in associating the product data with GTINs
- To implement the Technical Dictionary, an organization must categorize all saleable products according to the product classes and class properties specified in the Technical Dictionary

RosettaNet > Dictionaries > RNTD > Example

```
<class id="RNIC021" propDefs="RNIS001 RNIS043 RNS-XJA001">
  <identifiers>
    <code>RNIC021</code>
    <majRev>001</majRev>
    <date.def>2000-12-05</date.def>
  </identifiers>
  <names>
    <preferred.name>COPIER</preferred.name>
  </names>
  <definition.short>A machine used to make photographic copies of
    pages.</definition.short>
   <app.specific name="industry.domains">IT</app.specific>
</class>
```

Standardizing the semantics used to describe product characteristics and information

RosettaNet Standards > RNIF

- PIPs function within the RosettaNet Implementation Framework (RNIF), which is an XML-based protocol for packing, routing and sending PIP messages and business signals back and forth.
- The framework on which a partner transmits a PIP
- RNIF is used to create PIP guidelines that define how computer systems will cooperatively execute e-business processes in the global supply chain.
- **Specifies technical standards for message transport, such as security and header information**
- The RosettaNet Implementation Framework (RNIF) defines :
  - **Public Business Processes**: processes that involve interactions among the trading partners
  - **Private Business Processes**: business processes internal to the company
- RosettaNet defines and fixes Public Business Processes in terms of PIPs

RosettaNet Standards > RNIF > Public and Private Processes: Example

- Consider a simple business process example: requesting a quote.
- A **customer** issues a request for a quote from a **supplier** by sending a message that contains the specifications of the quote.

- The supplier checks for the availability of the items in the inventory
  - if it can meet the requirements of the quote, it sends the quote to the customer.
  - If not, it may identify another supplier for the customer. In this case, a referral is sent to the customer.

  - Checking the availability of items in the supplier's inventory and identifying alternative suppliers are (private) internal processes (they are not visible to the customer and do not involve trading partners).
  - Typically, organizations have their own custom implementations for private processes that adhere to their own internal standards

RosettaNet PIPs

- The RosettaNet standard **specifies over 100 PIPs for various business processes in the eCommerce supply chain**.

- Each PIP defines how two specific processes, running in two different partners' organizations, will be **standardized** and interfaced across the entire supply chain.

- PIPs **define the specific sequence of steps required to execute a business process between supply chain partners**, e.g. purchase order management, distribution of new product information

- PIPs aim to encapsulate business processes by specifying the **structure and format of business documents** (e.g. purchase order, purchase order acknowledgment) as well as the **activities, actions**, and **roles** for each trading partner.

RosettaNet PIPs

- So, RosettaNet PIPs **create standard <u>e-business dialogues for common business activities</u>** like order and inventory management, transportation, sales forecasting, etc

- In simple terms PIPs can be defined as the choreography and message content exchanged with trading partners.

- PIPs are system-to-system predefined XML-based dialogues (conversations).

RosettaNet PIPs > Dual Action and Single Action PIPs (1/2)

- Depending on the ebusiness process, a PIP may include one or two PIP Business Documents
- PIPs are either **dual action (PIPs with 2 documents)** or **single action (PIPs with 1 document)**
- **Dual Action PIPs:** used in cases where a *two-way conversation* is needed to process the information that is being sent.
  - *Example: Buyer and Seller Scenario.*
    - TThe buyer wants to order 10 widgets, so he sends a purchase order request (PIP 3A4- Request Purchase Order Action) to the seller of the widgets.
    - The seller sends back a purchase order confirmation (PIP 3A4- Purchase Order Confirmation action), advising the buyer that they are processing the buyer's order

RosettaNet PIPs > Dual Action and Single Action PIPs (2/2)

- **Single Action PIPs**
  - Involve only a *one-way conversation*
  - Used in cases where a response is not needed

- *Example: Sending an inventory report to the buyer*
  - The seller sells an Inventory Report (PIP4C1) to the buyer to inform them of the status of their inventory.
  - No return action is necessary since the seller already knows the status.

RosettaNet PIPs > PIP Elements

- The following elements make up a PIP:
  - Trading partner business roles (for example, buyer and seller)
  - Business activities between the roles
  - Type, content, and sequence of business documents
  - Constraints for interactions (time, security, authentication, and performance)
  - Structure and content of business documents, including DTDs that describe message guidelines
  - Message Types:

    – Signal - Either positive or negative acknowledgments that result from a message

    – Business Messages that result from a business action (for example, sending and receiving a purchase order)

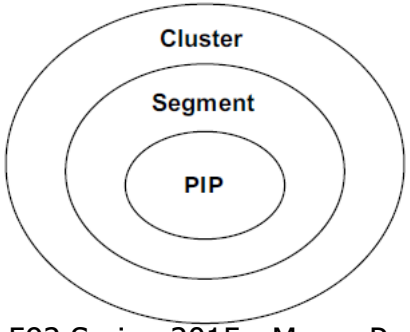
RosettaNet PIPs > Clusters

- The **PIPs are organized** in functionally logical groupings of segments and clusters.
- For example, the e-business dialogue **PIP3A4** *Purchase Order Request*, can be found in the *Quote and Entry Segment* grouping, which belongs to the *Order Management cluster*.
- All PIPs are available for **public download** at the RosettaNet Web site.
  - To access PIP specifications, click on a Cluster name below to view its Segments, select a Segment for a listing of the PIPs it contains, and click on a PIP to download a version.
- When you download a PIP, along with a specification written in Microsoft Word, you generally get a DTD, XSD, errata, and other documentation.
- http://www.rosettanet.org/DocumentLibrary/tabid/2979/DMXModule/624/Command/C

RosettaNet PIPs > Clusters

- Each **cluster** comprises two or more segments.
  - **Segments** are groups of related functionality
  - For example Cluster 3: Order Management has segments to manage quote and order entry as well as transportation and distribution.
  - Segments are further divided up into **PIPs**
    - and PIPs define one or more **Activities**,
      - which in turn specify **Actions** (an XML document that requests some action from a partner).
      - A receipt or reply to such a message is called a business signal message

Figure 1: Hierarchy of PIP Organization



RosettaNet PIPs > Clusters

- **CLUSTER 3: Order Management**
  - **Segment** A: Quote and Order Entry
    - **PIP** 3A1: Request Quote
      - **Activity**: Request Quote
        - » **Action**: Quote Request Action
        - » **Action**: Quote Confirmation
  - **Segment** B: Transportation and Distribution
  - **Segment** C: Returns and Finance
  - **Segment** D: Product Configuration

RosettaNet PIPs > Clusters

- PIPs fit into several clusters of core business processes..

- **Cluster 1**: Partner Product and Service Review.
  - Allows information collection, maintenance and distribution for the development of trading-partner profiles and product-information subscriptions.
- **Cluster 2**: Product Information.
  - Enables distribution and periodic update of product and detailed design information, including product change notices and product technical specifications.
- **Cluster 3**: Order Management.
  - Supports full order management business area from price and delivery quoting through purchase order initiation, status reporting, and management.
  - Order invoicing, payment and discrepancy notification also managed using this Cluster of processes.

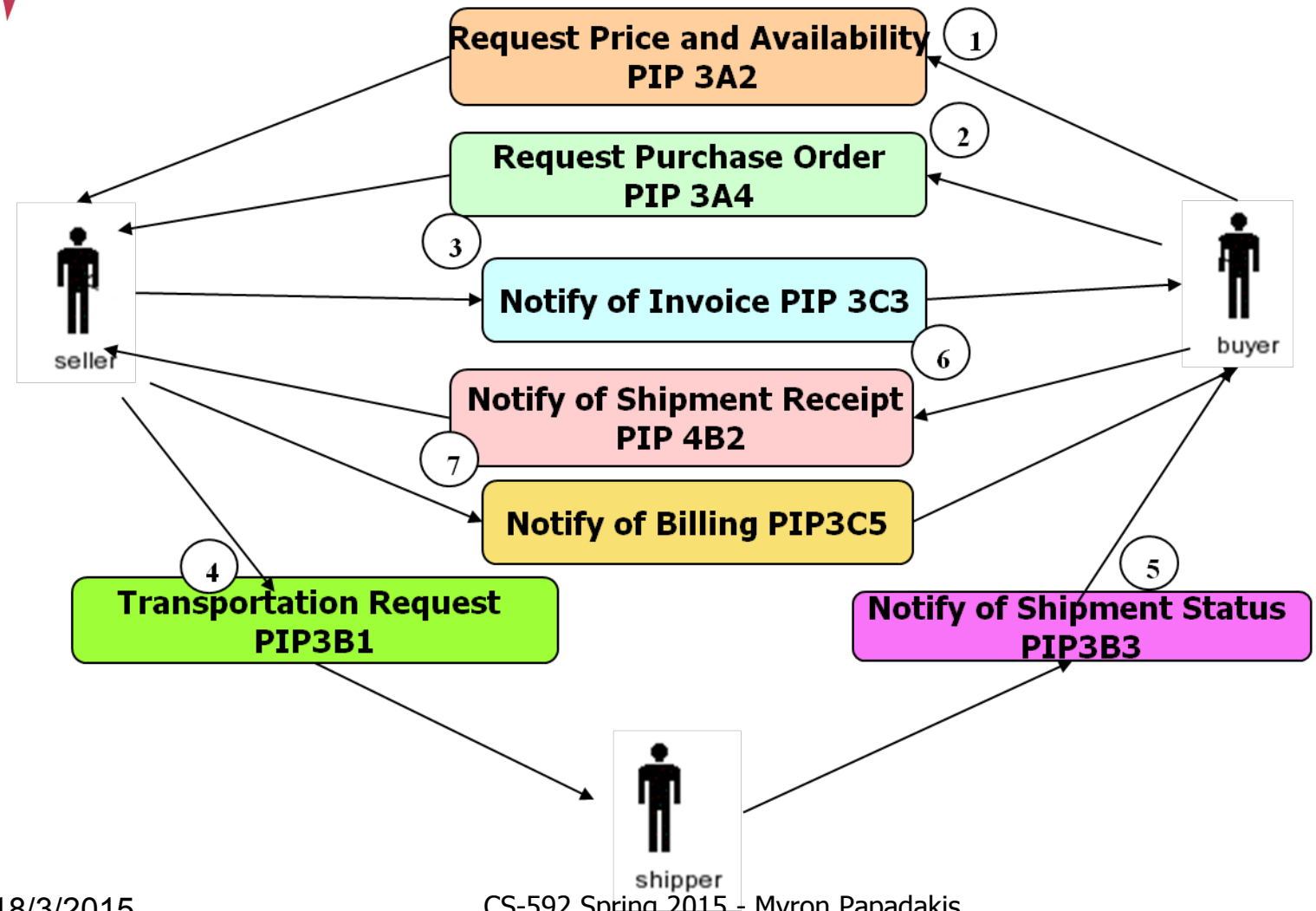
RosettaNet PIPs > Clusters

- **Cluster 4**: Inventory Management.
  - Enables inventory management, including collaboration, replenishment, price protection, reporting and allocation of constrained product.
- **Cluster 5**: Marketing Information Management.
  - Enables communication of marketing information, including campaign plans, lead information and design registration.
- **Cluster 6**: Service and Support.
  - Provides post-sales technical support, service warranty and asset management capabilities.
- **Cluster 7**: Manufacturing.
  - Enables the exchange of design, configuration, process, quality and other manufacturing floor information to support the 'Virtual Manufacturing' environment.

Some PIPs from Cluster 3 > Segment 3A: Quote and Order Entry

- PIP 3A1: Request Quote
- PIP 3A2: Request Price and Availability
- PIP 3A3: Request Shopping Cart Transfer
- PIP 3A4: Request Purchase Order
- PIP 3A5: Query Order Status
- PIP 3A6: Distribute Order Status
- PIP 3A7: Notify of Purchase Order Update
- PIP 3A8: Request Purchase Order Chang
- PIP 3A9: Request Purchase Order Cancellation
- PIP 3A10: Notify of Quote Acknowledgment
- PIP 3A13: Notify of Purchase Order Information
- PIP 3A14: Distribute Planned Order
- PIP 3A15: Notify of Quote Request
- PIP 3A16: Notify of Quote Confirmation
- PIP 3A17: Distribute Price And Availability Request
- PIP 3A18: Distribute Price And Availability Response
- PIP 3A19: Notify of Purchase Order Request
- PIP 3A20: Notify of Purchase Order Confirmation
- PIP 3A21: Notify of Purchase Order Change Request
- PIP 3A22: Notify of Purchase Order Change Confirmation
- PIP 3A23: Notify of Purchase Order Cancellation Request

Using RosettaNet PIPs Example (1/2)



Using RosettaNet PIPs Example (2/2)

- A buyer requests the price and availability of some products from a seller (PIP3A2)
- After receiving the response, the buyer initiates a Purchase Order Request (PIP3A4)
- The seller, after acknowledging the Purchase Order Request, sends an invoice notification (PIP3C3) to the buyer
- The seller sends a transportation request (PIP3B1) to the shipper (There is a third party in this scenario, which is a shipper)
- The shipper, after shipment of the goods, sends the status of the shipment (PIP3B3)
- When buyer receives the shipment, it sends a shipment receipt notification (PIP4B2) to the seller.
- Finally, the seller prepares a billing statement and notifies the buyer (PIP3C5)

RosettaNet Standards > PIPS > PIP 3A4: Request Purchase Order

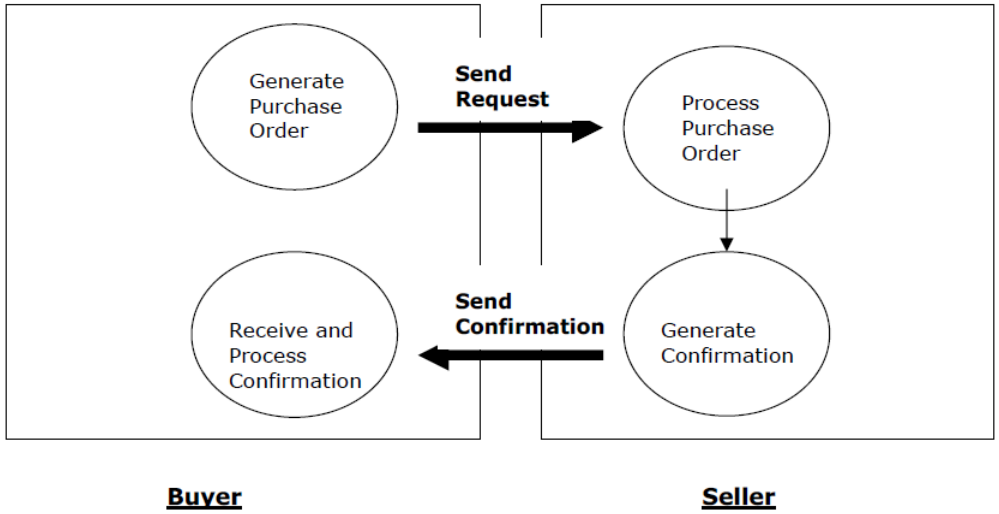
- **Purpose**: To support a process between trading partners that involves issuing a purchase order and acknowledging that purchase order (if the order is accepted, rejected, or pending).
  - the provider's acknowledgment may also include related information about delivery expectations.

- The PIP also supports the capability to cancel or change the purchase order based on the acknowledgment response and to acknowledge, if the order is accepted, rejected, or pending.

- When a provider acknowledges that the status of a purchase order product line item is "pending," the provider may later use PIP3A7, "Notify of Purchase Order Acknowledgment" to notify the buyer when the product line item is either accepted or rejected.

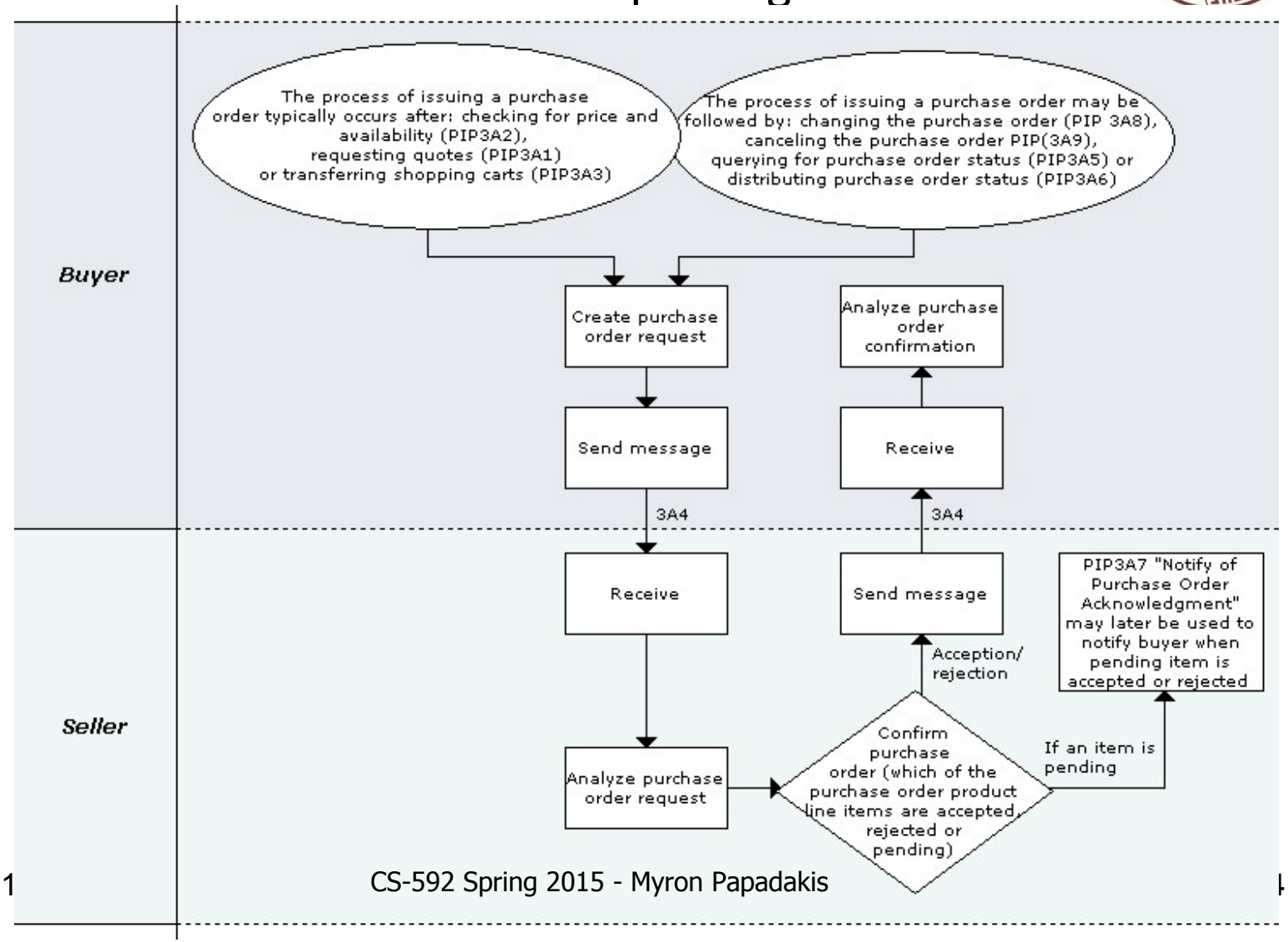
- Request Purchase Order standardizes the purchase order request and confirmation process by defining a common vocabulary for transmission of purchase order information

RosettaNet Standards > PIPS > PIP 3A4: Request Purchase Order > Business Process Context Diagram



- Prior to making any purchase order request, buyer can check for products price and availability using PIP 3A2, and request for quotation using PIP 3A1.
- Purchase Order Request send from buyer to seller, using PIP 3A4.
- Seller needs to acknowledge and confirm to the buyer for the acceptance or rejection of a pending line item in the purchase order.
- In the event where the seller has any counter proposal on the purchase order, the seller needs to change and notify the buyer, using PIP 3A7.

RosettaNet Standards > PIPS > PIP 3A4: Request Purchase Order > Business Process Scope Diagram



RosettaNet Standards > PIPS > PIP 3A4: Request Purchase Order > PIP Business Document

- Business Document is generated and exchanged by roles performing activities in this PIP.
- Business Document is listed and defined in Table 1.

Table 1: PIP Business Document

Business Document	Description
Purchase Order Request	A request to accept a purchase order for fulfillment.
Purchase Order Confirmation	Formally confirms the status of line item(s) in a Purchase Order. A Purchase Order line item may have one of the following states: accepted, rejected, or pending.

RosettaNet Standards > PIPS > PIP 3A4: Request Purchase Order

Table 5: Partner Role Descriptions	
Role Name	**Role Description**
Buyer	An employee or organization that buys products for a partner type in the supply chain.
Seller	An organization that sells products to partners in the supply chain.

Table 6: Business Activity Descriptions		
Role Name	**Activity Name**	**Activity Description**
Buyer	Initiate Purchase Order Request	This activity issues a Purchase Order to a Seller.
Seller	Initiate Purchase Order Confirmation	The Seller acknowledges, at the line level, if the Purchase Order is accepted, rejected, or pending.

RosettaNet Standards > PIPS > PIP 3A4: Request Purchase Order > Activity Descriptions

- Table 7 details the security, audit and process controls relating to activities performed in the PIP.

Table 7: Business Activity Performance Controls

Role Name	Activity Name	Acknowledgment of Receipt		Time to Perform	Retry Count	Is Authorization Required?	Non-Repudiation of Origin and Content?
		Non-Repudiation Required?	Time to Acknowledge				
Buyer	Initiate Purchase Order Request	Y	2 hrs	24 hrs	3	Y	Y
Seller	Initiate Purchase Order Confirmation	Y	2 hrs	24 hrs	3	Y	Y

RosettaNet Standards > PIPS > PIP 3A4: Request Purchase Order > Network and Implementation Specification

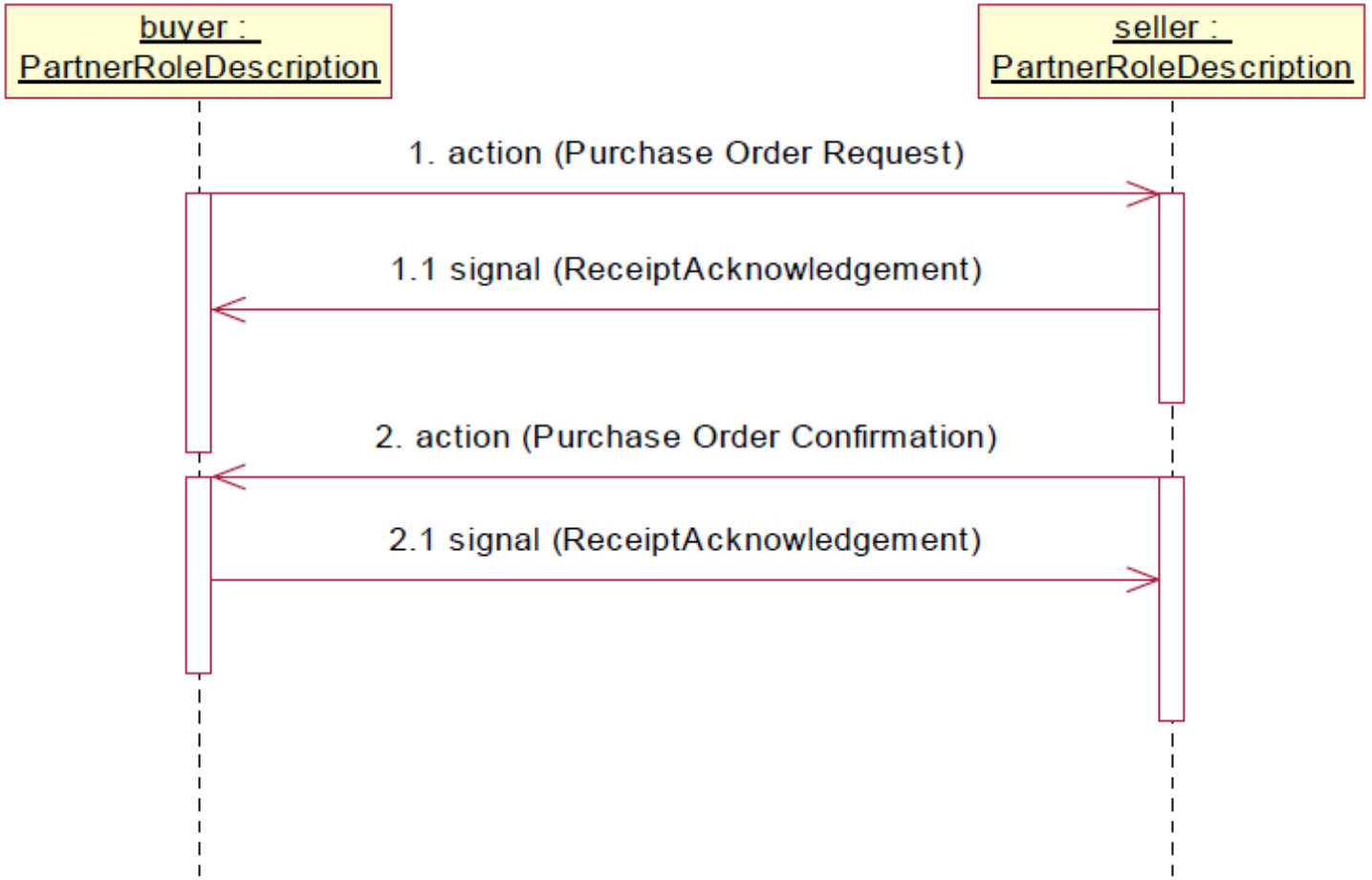
- Each network component maps into a role of the PIP model

Table 8: Network Component Specification		
Network Component	**Classification**	**Maps to Role in Business Process**
Buyer Service	Business Service	Buyer
Seller Service	Business Service	Seller

- Each business action maps to a Business Document of the PIP model.

Table 9: Business Action – Business Document Mapping		
Business Action	**Business Document**	**Document Function**
Purchase Order Request Action	Purchase Order Request	Request
Purchase Order Confirmation Action	Purchase Order Confirmation	Respond

RosettaNet Standards > PIPS > PIP 3A4: Request Purchase Order > Business Transaction Dialog Specification



Sequence Diagram of Request Purchase Order

RosettaNet Standards > PIPS > PIP 3A4: Request Purchase Order > Message Exchange Controls

Table 10: Message Exchange Control							
#	Name	Time to Acknowledge Receipt Signal	Time to Respond to Action	Included in Time to Perform	Is Authorization Required?	Is Non-Repudiation Required?	Is Secure Transport Required?
1.	Purchase Order Request Action	2 hrs	N/A	24 hrs	Y	Y	Y
1.1.	Receipt Acknowledgment	N/A	N/A	N/A	Y	Y	Y
2.	Purchase Order Confirmation Action	2 hrs	N/A	N/A	Y	Y	Y
2.1.	Receipt Acknowledgment	N/A	N/A	N/A	N	Y	Y

Table 11: Dialog: Service-Service			
#	Business Message	Digital Signature Required?	SSL Required?
1.	Purchase Order Request	Y	Y
1.1.	Receipt Acknowledgment	Y	Y
2.	Purchase Order Confirmation	Y	Y
2.1.	Receipt Acknowledgment	Y	Y

References

- http://www.rosettanet.org
- http://www.ibm.com/developerworks/library/ws-rose1/#ibm-pcon
- http://publib.boulder.ibm.com/infocenter/dmndhelp/v6r1mx/index.jsp?topic=/
- Service Composition for the Semantic Web, Medjahed, Brahim, Bouguettaya, Athman
- http://www.srdc.metu.edu.tr/~asuman/grenoble/_Dogac_RosettaNetFV.pp

Τέλος Ενότητας

Χρηματοδότηση

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ΕΣΠΑ 2007-2013
πρόγραμμα για την ανάπτυξη
ΕΥΡΩΠΑΪΚΟ ΚΟΙΝΩΝΙΚΟ ΤΑΜΕΙΟ

Με τη συγχρηματοδότηση της Ελλάδας και της Ευρωπαϊκής Ένωσης

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