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# Semantic Web Services PS

Exercise Sheet 10 – 03.06.2014

Please answer the following questions. Provide your elaborated answers in a PDF or a plain text file. If you make use of references when elaborating your answers, please add the proper citations to your document. The deadline for submissions to the tutors ([ioan.toma@sti2.at](mailto:ioan.toma@sti2.at) and [jose.garcia@sti2.at](mailto:jose.garcia@sti2.at)) is 9<sup>th</sup> June 2014 at 20:00 CET.

## Exercise 1 (10 points)

Given the following scenario description try to formulate a set of WSMO ontologies and service descriptions.

With an invocation of one of the following Web Services you can order a package shipment by specifying, senders address, receivers address, package information and a collection interval during which the shipper will come to your premises to collect the package. A shipper either responds with the estimated pickup (respecting the given time constraints) or with a fault message indicating that a pick up is not possible in the requested time interval. We have four distinct shippers with following constraints:

### Racer

- Rates (flat fee/each lb): Europe (41/6.75), Asia (47.5/7.15), North America (26.25/4.15), Rates for South America like North America, Rates for Oceania like Asia Furthermore for each collection order 12.50 are added!
- List of Countries Racer ships to is included in a WSDL file
- Only packages weighing 70lbs or less are shipped
- Constraints on Collection:
  - There should be at least an interval of 120 minutes for collection.
  - Latest Collection time is 8pm.
- Delivery Time
  - Ships in 2/3 (domestic/international) business days if collected by 6pm;

### Runner

- Rates (flat fee/each lb): Europe (50/5.75), Asia (60/8.5), North America (15/0.5), South America (65.75/12), Africa (96.75/13.5), Oceania has the same rates than Asia
- Exact list of countries included in a WSDL file
- When ordering a shipment using the Web Services, the shipment of one package can be ordered per invocation.

- If package weight exceeds 70 lbs, weight, length and height are required (the order has to be done via phone or fax)
- Constraints on Collection:
  - Collection can be ordered max 5 working days in advance.
  - Minimum Advance notice for collection is 1 hour
  - Collection is possible between 1am - 12pm (keep in mind that 12pm is noon!)
  - There must be at least an interval of 30 minutes for collection.
- Delivery Time:
  - Ships in 2 business days if collected by 10am;
  - Ships in 3 business days otherwise.

#### Walker

- Rates (flat fee/each lb): Europe (41/5.5), Asia (65/10), North America (34.5/3), South America (59/12.3), Africa (85.03/13), Rates for Oceania like Asia
- Only packages weighing 50 lbs or less are shipped
- Exact list of countries included in a WSDL file
- Constraints on Collection:
  - Shipment can be ordered maximum 2 business days in advance (the end of the pickup interval must be at most two business days in advance at the time of ordering).
  - Pickup time must be between 6 am and 11.00pm.
  - There must be at least an interval of 30 minutes for collection.
- Delivery Time
  - Ships in 2 business days if collected by 5pm

#### Weasel

- Rates (flat fee/each lb): United States (10/1.5)
- Delivery only in United States
- Constraints on Collection
  - The pick up interval must be at least 5 hours
  - The max. pick up interval is 4 days
  - Collection can be ordered until 8pm
- Delivery Time
  - 1 day if collected before 2pm

Next, try to express WSMO goals following given constraints:

#### Goal A1

- to: Tunis
- package dimensions: (l/w/h) 7/6/4 (inch)
- package weight: 1 lb

#### Goal A2

- to: Luxembourg
- package dimensions: (l/w/h) 7/7/5 (inch)
- package weight: 1.5 lb

### Goal B1

- to: Tunis
- package dimensions: (l/w/h) 40/10/10 (inch)
- package weight: 30 lb

### Goal B2

- to: Bristol
- package dimensions: (l/w/h) 40/24/10 (inch)
- package weight: 30 lb

Discuss which Web Services are fulfilling each of the aforementioned goals.

## Exercise 2 (10 points)

Download and install WSMX from [1]. Documentation on how to install WSMX is available at [2]. Register at least one of the ontologies and services you for Exercise 1.

## References

[1] <http://sourceforge.net/projects/wsmx/>

[2] WSMX Documentation <http://www.wsmx.org/papers/documentation/WSMXDocumentation.pdf>