Telecooperation Lab
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Telekooperation 1: Exercise WS15/16

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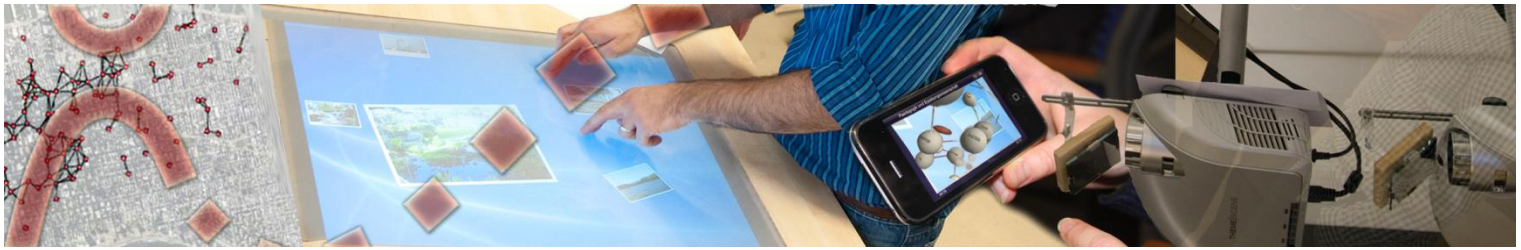

TK1 – EXERCISE

- Solution 4th Exercise
- 5th Theory Exercise
- 3rd Programming Exercise

Task 1: WSDL Elements (6P)

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The web service is given in illustration 1. Assume that the Class “Location” has the attributes “int x” and “int y”.

Write down the WSDL definitions (types, messages, portType and operations) for this web service in XML format.

```
package de.tu_darmstadt.informatik.tk;

import javax.jws.WebService;
import javax.jws.soap.SOAPBinding;

@WebService(targetNamespace="http://tk.informatik.tu-darmstadt.de",
name="LocationService")
@SOAPBinding(style=SOAPBinding.Style.RPC)
public class LocationServiceImpl{
        public Location getLocation(int id){ ... }
}
```

Illustration 1: LocationService.java

Task 1: WSDL Elements (6P)

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Types. Defines non atomic types.

```
<types>
  <xsd:schema>
    <xsd:complexTypename=„Location">
      <xsd:sequence>
        <xsd:elementname=„x" type=" xsd:integer"/>
        <xsd:elementname=„y" type=" xsd:integer"/>
      </xsd:sequence>
    </xsd:complexType>
  </xsd:schema>
</types>
```

Task 1: WSDL Elements (6P)

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Messages. Defines incoming and outgoing messages.

```
<message name="getLocationRequest">
  <part name="arg0" type="xsd:integer"></part>
</message>
<message name="getLocationResponse">
  <part name="return" type="Location"></part>
</message>
```

Task 1: WSDL Elements (6P)

Port Type. Defines the interactions.

```
<portType name="LocationService">
<operation name="getLocation" parameterOrder="arg0">
  <input message="tns:getLocationRequest"></input>
  <output message="tns:getLocationResponse"></output>
</operation>
</portType>
```

Task 2: REST vs. SOAP (4P)

Discuss the differences between REST and SOAP web services. Identify the advantages and disadvantages. Discuss especially the following attributes: transport protocol, typing, data format, addressing and states.

Task 2: REST vs. SOAP (4P)

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	REST	SOAP
Transport protocol	http: + Simple to implement	Many options (http, smtp …): + Ability to choose - Complexity
Typing	No Typing + Simplicity	Typing + More powerful
Data format	Multiple document formats (XML, HTML, PNG …) + Flexibility	Message exchange in XML: - Big overhead
Addressing	A URI references a resource: + Direct addressing	A URI references an interface – No direct addressing
States	Server is stateless + Good scalability	Server saves the state: + State does not have to be transmitted every time