

Course code: **SOAPUI/F**

Course title: **Automated network service tests using SoapUI**

Days: 2

## Description:

### Course intended for:

Testers, programmers and persons managing the quality of IT projects, wishing to raise their qualifications in the field of automated testing of network services (Web Services and SOA) using the SoapUI tools.

The training is focused mainly on technologies associated with Java.

### Course objective:

The training objective is to deliver practical knowledge, sufficient for preparation of automated tests of network services using SoapUI and launching of these tests during development and maintenance of software without human intervention.

### Requirements:

The training participants are required to know the basic concepts associated with SOA and Web Services and to be able to develop simple Groovy scripts and basic programs in Java or C# language.

### Course parameters:

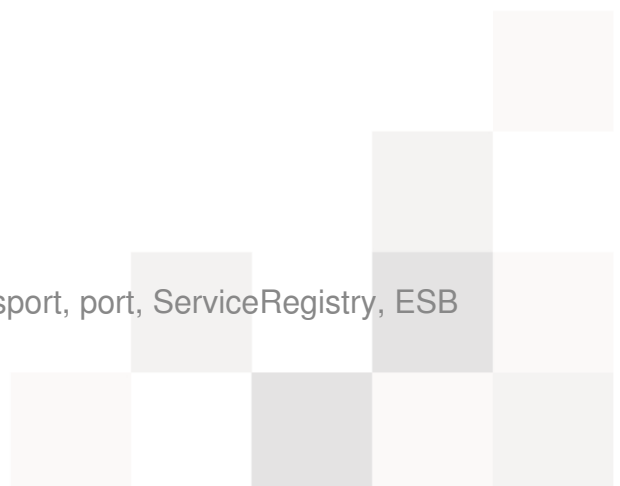
2\*8 hours (2\*7 net hours) of lectures and workshops (with a visible emphasis on workshops).

Group size: no more than 8 participants.

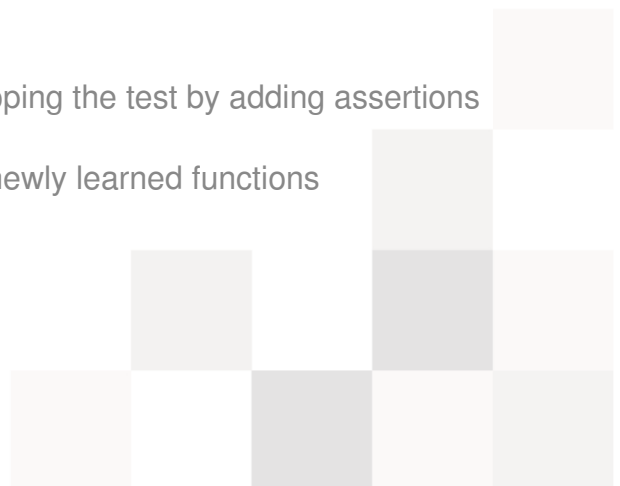
## Course curriculum:

### 1. Introduction to Web services

- What are Web services?
- The concepts of WSDL, SOAP, transport, port, ServiceRegistry, ESB



- The WSDL editor in eclipse; discussing of the mode of design and development of Web services
  - frameworks for generating of Web services (the example of Apache CXF)
  - a description of the test application, which will be used for the exercises (a set of network services launched in the developed ESB of FUSE ESB type)
2. installation and launching of the test application - (the test application consists of a frontend and a backend – client and server of the network service, the client is installed in the user computers)
- presenting of communication between the test application (backend and frontend) (wireshark etc), the structure of messages, encoding types, bare and wrapped Web services etc.
3. SoapUI tool components – application and concept
- What are alternative tools?
  - Discussing of tools (menu options, windows, bookmarks, components, scripts, configuration options etc.)
4. A simple test in SoapUI
- How we build a test – what are the test steps?
  - A functional Web service test for a test application, requests and responses, presented by the trainer step by step
  - Exercise: performance of the second test by the participants on the basis of the ready scenario
5. Components of the SoapUI test
- What are the components of a good test?
  - Additional components
  - Test components: assertions, developing the test by adding assertions
  - Exercise: test expansion by adding newly learned functions
6. SoapUI test parameterization



- How we perform parameterization - Introduction to properties
- Types of properties, range, transmission of properties between the test steps
- Test modification using conditional instructions
- Parameterization of properties from external data sources (files, environment)
- Parameterization through acquisition of data from database (JDBC)

## 7. Stubbing of network services

- Stubbing of a network service on the basis of WSDL
- Exercise: designing of a service mock for a test application and use of a stub

## 8. Communication with Web services using other transports

- Examples of Web service with transport other than SOAP/HTTP
- JMS - Web service using JMS
- HermesJMS tool
- Exercise: performance of a network service test based on JMS
- FTP - Web service using FTP transport
- FTP - real world scenario – examples of use
- SMTP - Web service using SMTP
- network services: attachments and MTOM optimization

## 9. AMF

- AMF - Web service using Flex and BlazeDS
- Other tools for AMF tests (e.g. Charles Proxy)

## 10. REST

- REST – as a method of calling of a network service
- Exercise: test for REST service



## 11. WebRecording

- HTTP/Flash/Javascript application tests recorded using SoapUI (WebHTTP WebRecording)
- Limitations of WebRecording using SoapUI
- Test performance using WebRecording

## 12. Performance tests

- Web service performance test using SoapUI and LoadUI
- Test types and kinds
- Performance test limitations in SoapUI
- Load scaling using LoadUI

## 13. Additional topics

- Adding of WS-Security to the test network service
- Testing of WS Interoperability using W3C tools
- Exercise: exemplary test

