

## **Course Information**

**Title:** Software Technologies for Intelligent Transport Systems (7.5hp)

### **Purpose**

Provide knowledge of selected software technologies for realizing and analyzing intelligent transport systems. The software technologies will be primarily studied from a (telematic) service perspective, including ITS platforms hosting multiple services. Potential technologies for realizing these are: Agent Technology, Web services and service-oriented computing. Related to realization of such systems are: system architecture choices and analysis (e.g. using optimization and simulation); information security.

### **Objectives**

Potential technologies to consider in the course:

- Agent technology
- Web services and service-oriented computing
- Formal and computational models (including simulation and optimization models)

After the course the participants should have:

- knowledge of the technologies mentioned above including their basic characteristics, their purpose, their potential and their limitations,
- ability to describe and characterize ITS services,
- knowledge about how the technologies have been applied to ITS services and ITS service platforms,
- analyze the potential use of a particular technology (mentioned above) for ITS services and ITS platforms,

### **Content**

- Agent technology
- Formal and computational modeling
- Web services and service-oriented computing
- ITS services and platforms
- Software and system architectures

### **Target group**

The main target group is the PhD-students in the National Postgraduate School of ITS. Other students with an interest in ITS are also welcome.

### **Course format**

The course comprises of (3-4) on-campus seminars (at BTH) and individual or group work (e.g. literature review, potentially implementation and coursework).

The course aims at accommodate students with different background, i.e. those with programming skill can choose to do some implementation/prototyping whereas other students may analyze a certain technology and/or an application area.

#### Tentative Plan:

The first phase of the course would be for the student to study a few technologies (planned at the start-up meeting):

- Define the core of the technologies (basic characteristics, its purpose, potential etc.)
- Identify examples where the technologies have been applied in the ITS-area and describe the purpose. How are the technologies applied?
- Present the result for the other students.

The second phase is about doing an in-depth exploration of an relevant issue concerning ITS-services and platforms (preferably connected to the student's own research).

The suggested plan looks like:

1. Start-up meeting (focus on initiating Phase 1.);
2. Meeting: presenting the results of phase 1 and introduction of phase 2
3. Meeting: half through phase 2
4. Meeting: presenting phase 2.

The meetings are primarily held in Karlshamn (possibly that the third meeting could be done online); Supervision is done on a need basis: by, visits, email or other ways.