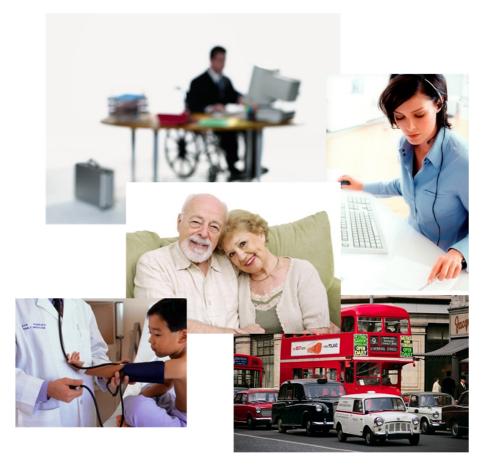# Project description - PERSONALIZATION
AND
DYNAMIC USER PROFILES

Users can be very diverse,
including such widely differing categories such as people with
disabilities and old or young people,

and situations where mobile services need to be delivered can be equally
diverse.

Therefore, we provide a solution that puts users in the centre,
and let services and devices adapt to users' needs – in a range of
situations!

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OVERVIEW

In order to achieve next generation of ICT services including personalized eHealth, smart homes, smart cities, and all benefits of IoT and IoE, personalization is a must! It is therefore important for Semcon to adapt and promote the new era of the personalization, which puts the user in the centre across a wide range of services and devices. We therefore make a call for two student projects, and potentially examination jobs for developing and promoting this important concept.

The projects include the following:

1] research and development of the system for personalization and dynamic user profiles,

2] development of personalized services/devices as a demonstrator.

INTRODUCTION

This is a project at Semcon AB on personalization and dynamic user profiles.

Personalization is about making services and devices being adapted to the individual user's needs. Some claim that they already provide personalized services/devices. However, this call addresses the new era of personalization, which puts the user in the centre **across a wide range of services and devices**. The present document describes what will be done as a whole. The detailed description and allocation of tasks to individual students will be done after discussions involving students, university representatives and Semcon.

THE CONCEPT PERSONALIZATION AND DYNAMIC USER PROFILES

The user has a private user profile which contains all information and preferences necessary for enabling personalization of a range of services and devices. In order for these services and devices to "understand" the user's needs and preferences, this work will be based on the standard work done at European Telecommunications Standards Institute [ETSI].

DESCRIPTION OF THE PROJECTS

The following tasks will be divided into two student projects, suitable for several students.

The work will be based on ETSI's standards on Personalization and dynamic user profiles [see references], initiated and led by Françoise Petersen.

It is of outmost importance to focus on users' needs and user experience in this work.

Personalization and user profiles include several examination jobs which in summary include the following:

3] Research and development of the system for personalization and dynamic user profiles

4] Development of personalized services/devices as a demonstrator

To provide further details, the following will be done [split in two projects and one examination job]:

- Research and development of the systems for dynamic context sensitive user profiles includes the following challenges and tasks:
  - **First step, develop a "static" user profile**
  - **Next steo, develop the dynamic context sensitive user profiles and show how the user profile can detect and adapt to various aspects of the context. Profiles will change depending on context. Develop what can trigger the changes of user profiles, such as:**
    - **User related such as user activities and health conditions**
    - **Software**
    - **Hardware, in particular IoT and IoE**
  - **A limited service will be developed as a demonstrator, to show how a service is personalized, and to show the different outcomes depending on personalization by different user profiles.**
  - **In addition, a presentation and/or film for explanation/promoting the concept of personalization will be done for presentation at Vitalis 25-27 April 2017** [http://www.vitalis.nu/en/].

    Furthermore, if there is time, the following would be great if it is also done:
  - Research and development of the implicit and explicit adaptation. How can the system recognize patterns and suggest preferences based on the users' behaviour in different context?
  - How shall conflicts related to context and preferences be handled?
  - When ICT services and devices are used by several people who have different preferences and needs, how shall the priorities be handled?
  - Suggest what needs to be amended in the standards related to personalization and dynamic user profiles.
  - Suggest guidelines for software developers who develop services and devices that are personalized based on this concept.

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User Scenarios

Various user scenarios suitable for testing personalization will be addressed, such as:

- Common everyday scenarios when switching between various activities and context.
- Addressing people with disabilities.

Skills needed and wanted

The following skills and knowledge are identified as important for the group of students who will work on research and development of the system. It is not necessary that each individual is an expert in all of the following domains, but at least the group of students need to cover a mix of the following:

- Software and Architecture
- User experience
- Android programming
- Java programming
- Sensors and actuators
- Personalization and dynamic user profiles [basic knowledge, please have a look at the references]
- Technical documentation
- Very good knowledge in English and/or Swedish

Wanted:

- IoT and IoE
- eHealth
- accessibility

Practical information

The students are welcome to do the project work at Semcon at Lindholmsallén 2 in Göteborg.

The student report can be written in English or Swedish depending on what the student and the teacher at Chalmers feel comfortable with. As Personalization and Dynamic User Profiles standard documents have been developed in an international context and there is an international interest in this topic, it would be an advantage to write it in English.

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References

The ETSI standards can be downloaded for free at: http://www.etsi.org/standards
Type **standard number** or **keyword** in the search box (top menu next to ETSI logo)

- select "Standards" [it becomes blue - default search is on "Website"]
- click on the green search icon

[1] ETSI EG 202 325: "Human Factors [HF]; User Profile Management".

[2] ETSI TS 102 747: "Human Factors [HF]; Personalization and User Profile Management: Architectural Framework".

[3] ETSI ES 202 746: "Human Factors [HF]; Personalization and User Profile Management; User Profile Preferences and Information".

[4] ETSI ES 202 642: "Human Factors [HF]; Personalization of eHealth systems by using eHealth user profiles [eHealth]".