



AimValley is a world class engineering and innovation center that designs and builds networking solutions. We are based in Hilversum, with a strong presence in the USA and India. We started in 2003 as a spin-off from Lucent Technologies (a successor from the American company AT&T), that is why we have a strong background in telecommunication solutions and have build-up vast expertise in real-time processor techniques. Most of our design & development is done in-house.

Product development entails preparation of requirement documents, specification of system architecture, electronic development (block diagrams, board design, system certification, mechanical design), FPGA/ASIC development, software development, system verification and product/factory introduction. AimValley makes use of FPGAs to process high speed transmission functions. Real-time requirements are also key in our software development.

Our business is about people and our teams are dynamic, skilled and passionate about technique. Recruiting and training the right talent is an essential part of the AimValley DNA. We have over 80 employees of which 75% works as design expert in the R&D organization. All R&D employees have a college or university level education.



### Project Introduction - Flexible SFP Storage Unit

Small Form-factor Pluggable (SFP) transceivers are used in high volume at AimValley. They are small and get lost a lot. To combat this problem, AimValley designed a storage unit with space for up to 200 SFPs.

This storage unit will be connected to the internal LAN of AimValley providing an easy way for everyone to find and identify SFP quickly.

The current designed SFP storage unit consists of eight PCBs each storing 24 SFPs. Each PCB is equipped with a Raspberry Pi CM3+ to manage the SFPs and to interface with the storage manager. The storage manager maintains a database of all the registered SFPs and provides a user friendly interface to view, search and manage the storage unit.

In order to finalizing the development of the SFP storage unit two assignments have been defined. The first assignment is to design and implement the storage manager software and the second one is the design and implementation of the PCB controller software. Please note that the location of the storage manager and what hardware is used is not yet decided.

The students need to draw up the requirements and come up with an architecture that supports the requested features.

### Project Description

PCB controller consisting of:

- > Housekeeping of board
- > Stateless, PCB needs to be easy to replace
- > Register/de-register PCB at Storage manager
- > Distinguish different SFP types
- > Upload SFP information to storage manager
  - SFP type and ID
  - Insertion and removal time of SFP
  - Location of SFP



### Complexity

The complexity of this project consists of:

- > Understanding the abstraction layer architecture
- > Devise a test strategy that covers all the supported features and limitations.

#### Keywords for this project

- > Linux, Networking
- > Programming, Database
- > MSA Standard, WebUI

#### Affinity

- > Embedded Linux
- > Software

#### Skills

- > Communicative
- > Independent
- > Competent in English

Are you a student with a can-do attitude and a passion for technology?  
AimValley is your company!

**Why not join us today: [working@aimvalley.com](mailto:working@aimvalley.com)**