

TOF Academy Course

«TOF Primer»

Date: Wednesday 29 August 2018 - Friday 31 August 2018 (3 days)

Venue: Swissmem*
Pfungstweidstrasse 102
8037 Zürich
Switzerland

Ladies and Gentlemen,

It's my pleasure to invite you to the TOF Academy course «TOF Primer». Photonics is quite a new engineering discipline. Of course, parts of it have already been developed and taught for a very long time - such as lens design, LED and laser technology, imaging, microelectronics, image processing, etc. That's fine so far, but bringing it all together into working systems is quite a challenge. Nowadays, the know-how in the design of 2D imaging systems is at an acceptable level. But when it comes to 3D TOF and LiDAR, the skill limitations in the engineering community become evident! A successful design of a 3D TOF camera, for example, needs a deep understanding of the underlying optical physics, the behavioral model of the used imager, an excellent understanding of the artifacts, etc. Also, thermal management is an issue because these cameras have an active illumination, typically quite powerful and, as a consequence, eye-safety becomes an issue as well.

This course closes the gap between the existing know-how and real working camera modules. Looking forward to seeing you in Zurich.

With best regards,

Beat De Coi

TOF Academy Chairman
CEO ESPROS Photonics AG



Course topics

TOF history +++ TOF principles +++
main parts of a TOF camera +++
relevant optical physics +++ light
detection +++ receiver physics +++
noise considerations +++ SNR +++
light emission and light sources +++
eye safety +++ light power budget
calculation +++ optics basics +++
optical systems and key require-
ments +++ bringing it all together +
+ electronics, PCB layout guidelines
+++ power considerations +++ cali-
bration and compensation +++
filtering +++ computing power
requirements +++ interference
detection and suppression +++ arti-
facts and how to deal with them ++
+ practical lab experiments +++
Q&A +++ much more +++

Course objective

The participant can design success-
fully a 3D TOF camera which can be
manufactured in volume at low cost.

Cost

CHF 2'800.00 per person
CHF 2'600.00 for Swissmem members
CHF 1'400.00 for epc635 or epc660 Evaluation Kit owners (one per Evaluation Kit)

Included in the cost are

- Course documentation
- A brand new epc611 Evaluation Kit
- Update service for the epc635/660 Evaluation kit
- Coffee, snacks, lunch and dinner (Wed/Thu)



epc611 Evaluation Kit

Registration

Please use the attached application form. Registration deadline is 27 July 2018.
Send the application form to TOF.Academy@espros.com
Places are limited, first come - first serve

Payment

- Credit card:  PayPal
- Bank payment: Please don't forget to add the billing instruction to the application form
- Payment: In advance (no admission without payment)

Further information

- Course language is English
- Each participant shall bring his Evaluation Kit epc635 or epc660 and a laptop to the course
- Hotel: Rooms are available in the «25hours Hotel Zürich West», Pfingstweidstrasse 102, 8005 Zürich, Switzerland, CHF 249.00 per night (www.25hours-hotels.com). Please refer to the TOF Academy by ESPROS to get a reserved hotel room. First come, first serve!

About TOF Academy

To our knowledge, there is no engineering school which addresses TOF and LiDAR as their own disciplines. We at ESPROS decided to fill the gap with a training program called TOF Academy. The objective is to provide a solid theoretical background, a guideline to working implementations based on examples, and practical work with TOF systems. Thus, the TOF Academy shall become the enabler for electronics engineers (BS and MS in EE engineering) to design working TOF systems. It is ideally for engineers who have, or will have, the responsibility to design a TOF system. We hope that our initiative helps to close the gap between the desire for TOF sensors and the realisation of widely-deployed TOF applications.

Program

Wed 29.08.18	Thu 30.08.18	Fri 31.08.18
09:00h Welcome, lesson 1	09:00h Lesson 5	08:30h Lesson 9 (early start)
10:15h Coffee break	10:15h Coffee break	09:45h Coffee break
10:45h Lesson 2	10:45h Lesson 6	10:15h Lesson 10
12:00h Lunch	12:00h Lunch	11:30h Wrap-up and closing
13:30h Lesson 3	13:30h Lesson 7	
14:45h Lesson 4	14:45h Lesson 8	
16:30h End of first day	16:30h End of second day	
19:00h Dinner	19:00h Dinner	

This schedule is preliminary and the stated time maybe adjusted



Application form (please fill in scan it and send it to TOF.Academy@espros.com)

Family name	
Given name	
Company	
Street address	
Zip / City	
Country	
Phone	
Email	
Payment method	 Bank payment (please state invoice address here):
..... , Date Signature	



www.swissmem.ch

Photonics

*Swissmem is the leading association for SMEs and large companies in Switzerland's mechanical and electrical engineering industries (MEM industries) and related technology-oriented sectors. Swissmem is committed to a strong place for work and research. Swissmem unites the Swiss electrical and mechanical engineering industries and associated technology-oriented sectors.

Location: www.swissmem.ch/en/metanavigation-unten/swissmem/how-to-locate-us.html