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This is the TWIKI page of ISOTDAQ2020 in Valencia

The main purpose of this Twiki is to share information relevant for the organization of the school

Related Web sites

School home page: <https://indico.cern.ch/event/828931/>

SharePoint site: TBD

Lab book:

<https://docs.google.com/document/d/1HRs6ytKLLYGNfR6TuG1STpt8YnmM1sSI5KLE8TimDiE/edit>

Key dates

1 August (or 1 September): start of publicity

15 October: End of application period (if needed: 1 November)

15 October: Start of evaluation period

15 October: Start looking for new tutors and teacher (to replace people that cannot come to the school)

1 November: Notification of the students (at the latest)

9 December: Material for the labs leaves CERN

9 December: Lab book

13 January: Start of the school

Action items

Item	target date	to be done by	Done	Remarks
Establish a financial plan	1 July	Local organizers	in progress	-
Update the new e-group "isotdaq-staff@cern.ch"	1 August	Markus	TBD	RUHL colleagues have to be removed
Create a Web site	1 August	Local organizers	done	Includes a tentative schedule - indico page created
Create a poster	1 August	Local organizers	done	-
Look for sponsors	-	COC, LOC, volunteers	done	-
Open CERN conference account	1 August	BvH - Patricia	done	-
Organize Kick-Off meeting	1 July	BvH	done	-
Collect channels for making publicity	1 August	All	done	-
Start publicity campaign	1 August	All	done	-
Confirm the availability of the lecturers and tutors	1 October	COC	ongoing	-
Look for new tutors to fill the holes	1 October	COC	ongoing	-
Look for new lecturers to fill the holes	1 October	COC	ongoing	-

Organize training of new tutors	1 October	COC	TBD	-
Set up the exercises by using local material	1 November	All	TBD	experienced tutors to provide help
Shipping of material to Valencia	1 December	COC	TBD	What will be shipped depends on the available of material in Valencia

Issues for later

- Decide on policy for funding the travel of tutors and lecturers

Teachers and tutors - Availability for ISOTDAQ2020

Name	Availability 2020	Arrival and departure dates	Hotel	Funding
Alessandro Marchioro (CERN)	YES	16.1. - 18.1	Already booked and paid	CERN
Markus Joos (CERN /ATLAS)	YES	10.1. - 23.1.	Already booked	CERN
Enrico Pasqualucci (INFN/ATLAS)	YES	12.1 - 22.1	Already booked and paid	INFN
Francesca Pastore (RHUL/ATLAS)	YES	12.1 - 22.1	NH OK	RHUL & ISOTDAQ
Hannes Sakulin (CERN/CMS)	YES	13.1. - 18.1. (TBC)	Kramer already booked	CERN
Andrea Negri (INFN/ATLAS)	YES	12.1 - 20.1	Already booked	INFN
Kostas Kordas	YES	16.1 - 22.1	help	A.U.Thessaloniki & ISOTDAQ
Mauricio Feo	YES	13.1 - 15.1	Kramer, already booked	CERN & ISOTDAQ
Roberto Ferrari	YES	12.1 - 22.1	NH OK	INFN
Manoel Barros Marin	YES		Booked	CERN & ISOTDAQ
Gokhan Unel	YES		TBD	UCI
Martin Purschke	YES	Jan 18-22	booked	ISOTDAQ & BNL
Serguei Kolos	YES	15.01 - 17.01	Kramer	UCI & ISOTDAQ
Paolo Durante	YES		TBD	CERN
Fabrice Le Goff	YES		TBD	CERN
Alessandro Thea (RAL/CMS)	YES	12.1-15.1 (TBC)	help	RAL
Barthélemy von Haller	YES	12.1 - 16.1	NH OK	CERN
Petr Zejdl	YES	13.1. - 19.1.	Kramer	CERN
Tommaso Colombo			TBD	CERN
Gianluca Lamanna	YES	12.1 - 18.1	help	INFN & ISOTDAQ
Dominique Gigi	YES	16.1 - 22.1	Kramer	CERN
Adam Abed Abud	YES	12.1 - 22.1	Booked	CERN
Gary Boorman	YES	11.1 - 15.1	Booked	CERN/RHUL
Andrew Rose			TBD	Imperial College
Adriaan Rijllart	YES	12.1 - 22.1	Booked	CERN
Wojciech Brylinski	YES	13.1 - 22.1	NH OK	

				50% ISOTDAQ and 50% CERN
Marc Dobson	YES	16.1 - 22.1	Kramer	CERN
Cristovao Beirao	YES	12.1 - 22.1	NH OK	CERN & ISOTDAQ
Vincenzo Izzo (INFN/ATLAS)	YES	12.1 - 22.1	NH OK	INFN
Johannes Martin Wuthrich	YES	12.1 - 22.1	Kramer	ETHZ (Travel) & ISOTDAQ (Stay)
Carlos Abellan	YES		TBD	?
Vesa Simola	YES	12.1 - 22.1	Booked and paid	CERN
Simone Bologna	YES	13.1 - 24.1	Booked	50% Institute and 50 % ISOTDAQ
Filippo Costa	YES	11.1 - 14.1	Booked	CERN
Dinyar Rabady	YES	15.1 - 16.1	Kramer, already booked	CERN
Sioni Summers	YES		TBD	

Lecture slots

Users guide: Put your name into the column "lecturer" to reserve this slot for you. Lecturers that are only coming to the school for a day or two should claim their slots by 10 November. Lecturers that stay longer (e.g. because they are also tutors) should react between 10 and 20 November.

Number	Lecture date	Starting time	Lecturer
1	Mon 13 January	9:30	Andrea Negri
2	Mon 13 January	10:30	Gary Boorman
3	Mon 13 January	12:00	Filippo Costa
4	Mon 13 January	14:00	Gokhan Unel
5	Mon 13 January	15:00	Markus Joos
6	Mon 13 January	16:30	Gokhan Unel
7	Mon 13 January	17:30	Alessandro Thea
8	Tue 14 January	9:30	Vincenzo Izzo
9	Tue 14 January	10:30	Hannes Sakulin
10	Tue 14 January	12:00	Maurício Féo
11	Wed 15 January	9:30	Alessandro Thea
12	Wed 15 January	10:30	Gianluca Lamanna
13	Wed 15 January	12:00	Roberto Ferrari
14	Thu 16 January	9:30	Markus Joos
15	Thu 16 January	10:30	Dinyar Rabady
16	Thu 16 January	12:00	Serguei Kolos
17	Fri 17 January	9:30	Sioni Summers
18	Sat 18 January	9:30	Enrico Pasqualucci
19	Sat 18 January	10:30	Adam Abed Abud
20	Sat 18 January	12:00	Paolo Durante
21	Sat 18 January	14:00	Vesa Simola
22	Sat 18 January	15:00	Manoel Barros Marin
23	Sat 18 January	16:30	Paolo Durante
24	Sat 18 January	17:30	Kostas Kordas
25	Mon 20 January	9:30	Martin Purschke
26	Tue 21 January	9:30	Sandro Marchioro

27	Tue 21 January	10:30	Martin Purschke
28	Tue 21 January	12:00	Sandro Marchioro
29	Wed 22 January	9:30	-
30	Wed 22 January	10:30	Francesca Pastore
31	Wed 22 January	12:00	-

Overview of lectures

Number	Duration	Day	Title (RHUL)	Lecturer 2019	confirmed or likely Lecturer 2020 (Valencia)
1	60	TBD	Introduction to data acquisition	Andrea Negri	Andrea Negri
2	60	TBD	Networking for data acquisition systems	Fabrice Le Goff	Vesa
3	60	TBD	Introduction to VME bus	Markus Joos	Markus Joos
4	60	TBD	Introduction to trigger	Alessandro Thea	Gokhan Unel
5	60	TBD	Trigger hardware	Andrew Rose	Dinyar Rabady
6	60	TBD	Microcontrollers	Mauricio Feo	Feo
7	60	TBD	PCIexpress	Paolo Durante	Paolo
8	60	TBD	Introduction to FPGAs	Hannes Sakulin	Hannes Sakulin
9	60	TBD	Modular electronics	Markus Joos	Markus Joos
10	60	TBD	DAQ hardware	Vincenzo Izzo	Izzo
11	60	TBD	LabVIEW	Gary Boorman	Gary Boorman or Adriaan Rijllart
12	60	TBD	Introduction to detector readout	Gokhan Unel	Gokhan Unel
13	60	TBD	Timing for DAQ	Sophie Baron	Filippo Costa
14	60	TBD	Programming for today's physicist and engineers	Alessandro Thea	Alessandro
15	60	TBD	TDAQ design: from test beam to medium size experiment	Roberto Ferrari	Roberto
16	60	TBD	DAQ software	Enrico Pasqualucci	Enrico Pasqualucci
17	60	TBD	Optical links	Paolo Durante	Paolo
18	60	TBD	A scalable, portable DAQ system design	Martin Purschke	Martin
19	60	TBD	An Introduction to medical imaging devices	Martin Purschke	Martin
20	60	TBD	Microelectronic technologies for HEP Instrumentation (1)	Alessandro Marchioro	Alessandro
21	60	TBD	Microelectronic technologies for HEP Instrumentation (2)	Alessandro Marchioro	Alessandro
22	60	TBD	GPU in HEP: online high quality trigger processing	Gianluca Lamanna	Gianluca
23	60	TBD	Design and implementation of a monitoring system	Serguei Kolos	Serguei Kolos

24	60	TBD	Intelligent triggering: pattern recognition with Associative Memories and other tools	Kostas Kordas	Kostas Kordas with some modified content
25	60	TBD	Machine learning	was: The Trigger and DAQ system of the EUDET-type beam telescopes by Jan Dreyling-Eschweiler	Sioni Summers
26	60	TBD	Continuous DAQ systems (DUNE, protoDUNE)	Giovanna Lehmann-Miotto	Alessandro
27	60	TBD	Advanced FPGA programming	Manoel Barros Marin	Manoel Barros Marin
28	60	TBD	T/DAQ for the LHC experiments and upgrades	Francesca Pastore	Francesca
29	60	TBD	Facebook lecture	Manos Karpathiotakis	
30	60	TBD	Storage	Intel	Adam
31	60	TBD	TBD	-	TBD

Candidate lectures and lecturers

Title / subject of the lecture	Potential speaker	Additional information
"Introduction to FPGA" or "FPGA101, basics of VHDL" or "TDAQ DUNE"	Kunal Kotheekar	ISOTDAQ 2019 student
Waveform Digitizing and Signal Processing	PSI - Gary Eric Boorman also proposed to do it (2019)	not available this year
TBD	Jacopo Pinzino	ISOTDAQ 2012
Machine learning with FPGAs	Sioni Paris Summers	expert FPGA, from CMS L1, Imperial College
TBD	Andrew Rose (Imperial)	CMS L1 (Particle Flow in FPGA)
Threaded programming and trigger/reco software	Stuart Martin-Haugh (RAL)	ATLAS Trigger Core Software Co-Convener
Project management	Will ?	
Storage systems for DAQ	Adam Abed Abud (Liverpool/CERN)	
Networking	Vesa Simola	recommended by Eukeni
TBD	ALICE	-
Solve demand control and service quota management across Facebook backend systems especially when thousands of engineers use the same infrastructure shared as different services like monitoring, batch, logging, ETL and many more.	Facebook	-
Under sea fiber optics and how Facebook goes about managing a global highly connected and available network.	Facebook	-
Machine learning	Intel?	-
Internet of things	idea proposed by Sandro	-

Status of the labs

Availability of tutors and equipment

Lab	CERN responsible	Description	Confirmed / Likely Tutors 2020	Orphaned sessions	Equipment to be provided by Valencia	Lab Book
1	Joos	VMEbus programming	Joos	0	1 monitor (with DVI-I cable), 1 keyboard (USB) and one mouse (USB)	TBD
2	Joos	NIM	Pastore, Negri, Izzo	0	One digital oscilloscope. One voltmeter	TBD
3	Joos	NIM & scintillator	Ferrari, Kordas	0	One digital oscilloscope, one voltmeter	TBD
4	Joos	Muon DAQ	Pasqualucci, Beirao	0	1 monitor (with DVI-I cable), 1 keyboard (USB) and one mouse (USB)	TBD
5	Sakulin	FPGA	Gigi / Zejdl	0	1 monitor (VGA), 1 keyboard (USB) and one mouse (USB)	TBD
6	Sakulin	MicroTCA	Sakulin / Dobson	0	1 monitor (VGA), 1 keyboard (USB) and one mouse (USB)	TBD
7	Durante	LabView	Rijllart maybe with help from Boorman	0	1 monitor (VGA or HDMI (not yet defined)), 1 keyboard (USB) and one mouse (USB), 1 Power Cable	TBD
8	Durante	ADCs	Barros Marin	0	One digital oscilloscope (possibly high-end), 1 monitor (VGA or HDMI (not yet defined)), 1 keyboard (USB) and one mouse (USB)	TBD
9	von Haller	Networking	Simola	0	1 monitor with VGA cable (and power), 1 keyboard, 1 mouse, 4 power chords (for our computers and switch)	Done (Gitlab)
10	Sakulin	Microcontroller	Bologna, von Haller (as backup/help if needed)	0	1 PC with internet access (+FullHD screen, keyboard, mouse), 1 generic power supply with banana plugs (up to 12V/3A), 1 support stand + 2 clamps similar to the attached image.	TBD
11	Durante	Storage systems	Colombo, Durante	0	1 monitor (VGA), 1 keyboard (USB) and one mouse (USB) for the server we'll ship, plus one desktop so more than one student can do the exercise in parallel	TBD
12	von Haller	Control systems	Wojciech, Adam	0	2 Desktop PCs running CC7 connected to the network, 2 monitors, 2 keyboards (USB) and two mouse (USB)	TBD

13	Durante	SoC FPGA	Wüthrich	0	2 monitors (VGA), 2 keyboards (USB), 2 mice (USB), if possible 1 (64bit) computer running virtualbox	TBD
14	von Haller	GPU	Lamanna	0	mouse, keyboard and a large monitor	TBD

General: 20-30 power cords

GitLab repository for the labs [↗](#)

Candidate labs

Title / subject of the lap	Proposed by	Additional information
beam telescope	Hendrik Jansen (DESY)	proposal from 2015. Was not in the program of Vienna
Chip design	Sandro	As an evening activity
unclear	Jubin MITRA	

Candidate tutors

Name	Background	Interested in exercise	financial status
Kunal Kotheekar	ISOTDAQ2019	FPGA Basics (5) or ADC Basics for TDAQ (8)	UNCLEAR
Marcelo Vicente	ISOTDAQ2015	FPGA (ex13)	UNCLEAR
Ioannis Xiotidis	ISOTDAQ2016	2 (or 5)	UNCLEAR
Suerfu Burkhan<suerfu64@gmail.com>	ISOTDAQ 2017	5, 10 and others	unclear
Jacopo Pinzino	ISOTDAQ 2012	5, 14 (or others)	had volunteered in 2019 for the SoC lab but came too late. Contact him for the 2020 edition
Sioni Paris Summers	CMS L1, FPGA expert	any, interest in FPGA and MC	no travel (London)
Simone Bologna	ISOTDAQ 2019 student	Microcontroller (10), Mauricio knows him	unclear
George Gimias	ISOTDAQ 2019 student	SoC (13)	unclear
Christos Bakalis	ISOTDAQ 2019 student	FPGA (also as lecturer)	unclear
Vesa Simola	recommended by Eukeni	networking	unclear

Action list based on 2019 debriefing

--> Action 1: Have a lecture to give the big picture and introduce the program. Resize some other lectures to fit it in and avoid duplication.

--> Action 2: Have a lecture at the end of the program to wrap up the program.

- > Action 3: Have the survey opened the first day to evaluate every single lecture and lab.
- > Action 4: Distribute the female students randomly. We make the groups by alphabet.
- > Action 5: Consider a ML lecture for next year.
- > Action 6: Start lectures sharp on time (if there are no exceptional circumstances)
- > Action 7: Lab book: Use a common document editable by many at the same time, such as Google Doc.
- > Action 8: Make sure that social activities happen also, if not in majority, during the first week.
- > Action 9: Remind lecturers that the aim is to have a mix of mentoring lectures and informative lectures. Also that it should be 5-10 minutes shorter to let time for questions.
- > Action 10: We should categorize the lectures : overview, technology, special interest. We can then encourage lecturers of a certain group to have a meeting to harmonize their lectures.

Checklist for the local organizers

This is based on the feedback collected in 2018.

- Check lab book before printing
- WIFI in hotel is important
- Dinner should be on the last day or the day before the free day
- Bigger screens for the labs
- Bigger room for labs

- pdf_logo.zip: logos

- png_logo.zip: logos

This topic: Sandbox > DaqSchool2020

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